NEAT EVALUATION FOR APEXON:

Quality Engineering

Market Segment: AI-Based Analytics & Automation

Introduction

This is a custom report for Apexon presenting the findings of the NelsonHall NEAT vendor evaluation for *Quality Engineering* in the *AI-Based Analytics & Automation* market segment. It contains the NEAT graph of vendor performance, a summary vendor analysis of Apexon for quality engineering services, and the latest market analysis summary.

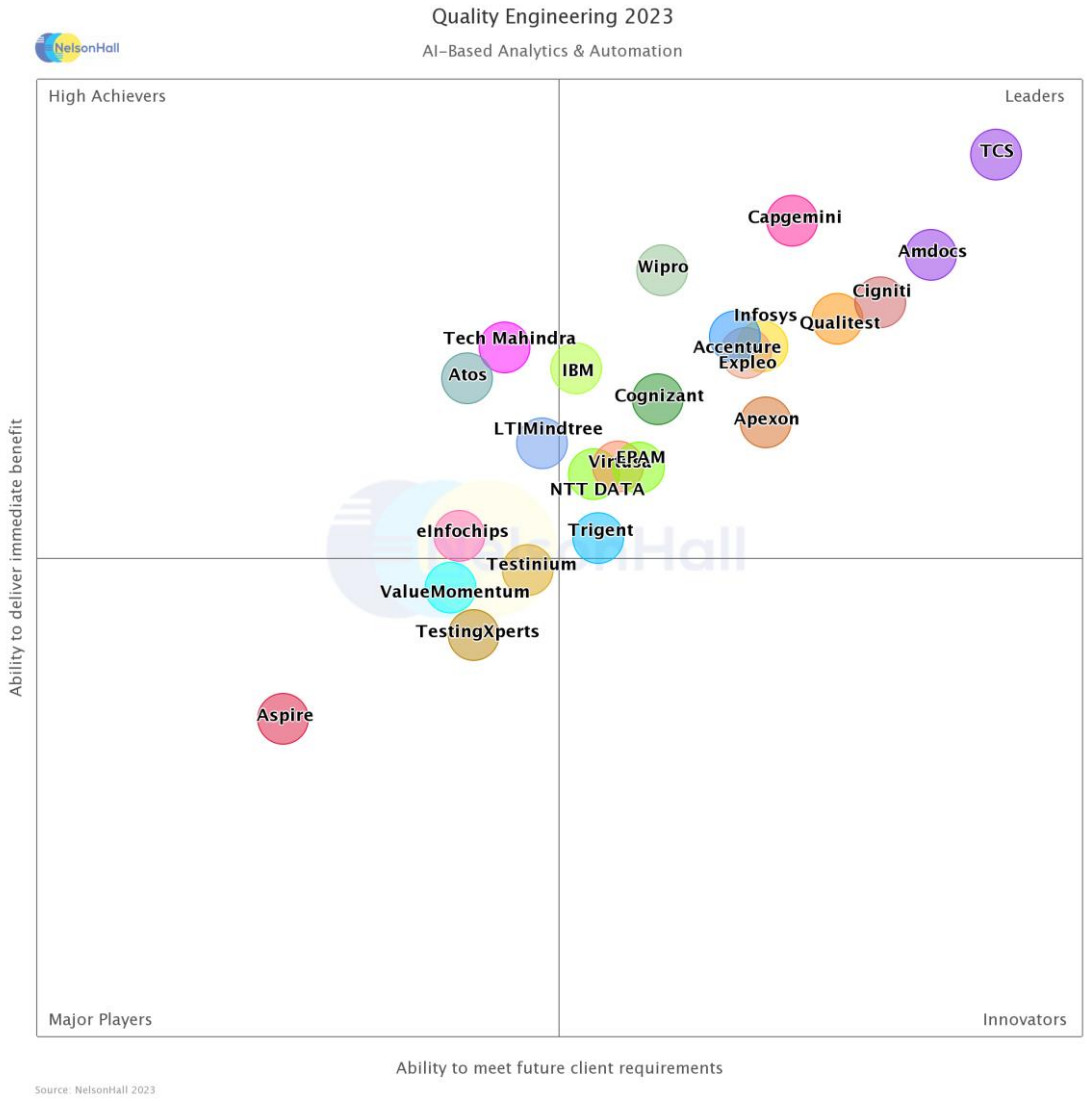
This NelsonHall Vendor Evaluation & Assessment Tool (NEAT) analyzes the performance of vendors offering quality engineering services (formerly referred to as software testing services). The NEAT tool allows strategic sourcing managers to assess the capability of vendors across a range of criteria and business situations and identify the best performing vendors overall, and with specific capability in application security testing, RPA-based test automation, AI-based analytics & automation, UX testing, cloud migration testing, and ERP & COTS testing.

Evaluating vendors on both their 'ability to deliver immediate benefit' and their 'ability to meet client future requirements', vendors are identified in one of four categories: Leaders, High Achievers, Innovators, and Major Players.

Vendors evaluated for this NEAT are: Accenture, Amdocs, Apexon, Aspire Systems, Atos, Capgemini, Cigniti, Cognizant, eInfochips, EPAM Systems, Expleo, IBM, Infosys, LTIMindtree, NTT DATA, Qualitest, TCS, Tech Mahindra, TestingXperts, Testinium, Trigent, ValueMomentum, Virtusa, and Wipro.

Further explanation of the NEAT methodology is included at the end of the report.

NEAT Evaluation: Quality Engineering (AI-Based Analytics & Automation)



NelsonHall has identified Apexon as a Leader in the *AI-Based Analytics & Automation* market segment, as shown in the NEAT graph. This market segment reflects Apexon's ability to meet future client requirements as well as delivering immediate benefits to its quality engineering clients with specific capability in AI-based analytics & automation.

Leaders are vendors that exhibit both a high ability relative to their peers to deliver immediate benefit and a high capability relative to their peers to meet future client requirements.

Buy-side organizations can access the *Quality Engineering* NEAT tool (*AI-Based Analytics & Automation*) here.

Vendor Analysis Summary for Apexon

Overview

Apexon has ~870 testing practitioners in its QE practice, which is a horizontal line of business with its own P&L. The practice has ~70 clients and ~50 Ips, and positions around QE transformation for its clients. It targets the same client base as the larger Apexon, and it has the same priorities: BFSI and healthcare & life sciences clients. It increasingly provides QE services bundled with Apexon's digital engineering services.

The practice has accelerated its investments around consulting (with a standalone QE consulting unit). It has focused on transforming its client organizations' QE units across the enterprise and bundled build and test services, SAP and COTS (e.g., e-commerce), and non-functional testing.

Apexon has created its Quality Automation Framework (QAF), a continuous testing platform. QAF is based on open-source software and integrates with the following:

- Test execution: Selenium, Appium, Tricentis Tosca, QMetry, and Python scripts
- Test defect management: Micro Focus ALM, Rally, qTest, and ApTest Manager
- BDD: Cucumber
- DevOps: integration with Jenkins, Hudson, and TeamCity
- Cloud device labs: Perfecto Mobile/Perforce and Sauce Labs. The company has its labs of mobile devices, with one lab in Santa Clara and the other in Hyderabad, India. In total, Apexon highlights that it provides access to ~3k physical devices (of which 800 are in Santa Clara)
- MBT.

Apexon has released QAF under the MIT open-source license. New features include:

- Data and data visualization, collecting data from different sources; persona-based dashboards; and monitoring continuous testing KPIs
- Automated creation and maintenance of test scripts for API testing based on Swagger definitions
- Integration of visual testing (Applitools). QAF also supports Python-based scripts
- Integration with Lambdatest (for access to a cloud mobile lab and container-based parallel execution).

QAF has been deployed with 20 clients.

Financials

NelsonHall estimates that Apexon's pro-forma testing revenues were $65m–$70m in 2022 (up from ~$60m in 2021).

Strengths

- *AI-based analytics*: Apexon has a strength in AI-based analytics, thanks to the former Infostretch. The company has a solid portfolio in this space, although we have seen only incremental enhancements rather than new AI use cases
- *Application migration to the cloud testing*: Apexon has a relevant service portfolio with specialized services. However, the capabilities are largely based on individual practitioner expertise
- *COTS testing*: the offering is in line with the market, with Apexon having expert-based capabilities and some IP in the form of test case libraries.

Challenges

- *Continuous testing*: Apexon continues to invest in its test automation framework, QAF. The platform lacks building blocks such as test support services (test data and environment management). We acknowledge that Apexon has made some progress with specialized services such as API test script generation based on Swagger requirements and with LambdaTest (for VM/container execution)
- *AI-based automation*: Apexon has automated test script maintenance (self-healing) capabilities, like most tier-one QE vendors. It has not invested in automated test script generation, which NelsonHall thinks has a high potential for acceptance. However, Apexon highlights it can generate test scripts automatically, for API testing, from API requirement files, creating intermediary test cases, using BDD/the Gherkin language
- *UX testing*: the offering is in line with the market. Apexon did not demonstrate it has gone beyond expert-based know-how and backed its capabilities with IP. Apexon's UX testing capabilities lack automation.

Strategic Direction

Apexon has, in the past, focused on three priorities:

- Continuous testing, where the demand from organizations remains solid. The company continues to add incremental enhancements here
- AI use cases, mostly around AI-based analytics
- Leveraging the capabilities of other Apexon units to expand its QE portfolio.

Outlook

Apexon continues its integration strategy, leveraging the capabilities of other Apexon units. The company has invested in QE offerings around enterprise applications/COTS and e-commerce. We think UX research and testing are next.

The company will focus on capturing QE opportunities in its core verticals (life sciences & healthcare, BFSI, telecom & high tech, and others), where it has ample opportunity for growth. Examples of further growth include insurance in BFSI or service providers in life sciences. To address these opportunities, we expect that Apexon will deploy and deepen its service portfolio, with automation and AI as priorities along with the cloud.

Apexon is also at an early phase of development in product testing. Given its positioning as a digital engineering firm, NelsonHall expects Apexon to continue investing in its connected device QE portfolio.

Quality Engineering Market Summary

Overview

The quality engineering (QE) market, also called software testing or quality assurance, is going through an extended growth cycle focused on continuous testing (i.e., testing under agile methodologies, using DevOps tools, and deploying automation). This cycle has been going for five years and still has significant growth potential: spending continues to grow in mid- to high-single digits.

QE vendors continue to invest in their continuous testing platforms, driving automation beyond functional testing to support services such as test environment and test data management, and non-functional testing.

AI is playing an increasing role, initially using analytics to conduct more selective and informed testing, driving productivity up. We think QE is on the verge of disruption with the pending introduction of AI-based automation to generate test scripts automatically. AI-based automation, combined with BDD and once-promising technologies such as model-based testing, will automate the 'requirements>test cases>scripts' cycle and shorten functional testing significantly.

Finally, quality engineering is becoming increasingly technical across existing and new areas (such as API testing and chaos engineering). This increasing technicality is driving major workforce reskilling investment in the context of talent shortages.

Buy-Side Dynamics

The three major client segments for QE services are:

- 'Agile Mainstream': organizations that are transitioning to hybrid agile (with digital projects adopting agile and non-digital remaining on waterfall methodologies). They are currently implementing DevOps tools (i.e., continuous testing) to increase their level of automation
- 'Advanced Automation': organizations that are engaged in an agile and continuous testing transformation like Agile Mainstreams. However, they look at emerging automation opportunities (e.g., AI-based automated test script creation, RPA tools) to reach new levels of automation, initially in functional testing
- 'Digital Matures': organizations that have several digital programs and look to automate digital technologies (e.g., Salesforce, application cloud migration).

'Agile Mainstream' clients select their QE vendors based on their past performance in similar projects, including internally and externally (with other clients); vendors must also demonstrate their ability to:

- Deploy continuous testing technologies to drive automation to serve agile projects
- Expand automation outside of functional execution and experiment with new functionality such as test support services (e.g., test data and environment management) and AI use cases
- Reskill manual testers towards technical services.

'Advanced Automation Organizations' select their QE vendors based on their ability to demonstrate:

- Their investment in AI use cases, initially around AI-based analytics and expanding to automation
- Best practices and sharing a clear view of the art of the possible
- Change management capabilities to drive tester buy-in.

For 'Digital Matures', vendors must demonstrate the following:

- They either specialize in testing digital technology (e.g., Salesforce, applications migrated to the cloud) or have both build and test capabilities. If the digital technology comes from an ISV, vendors must demonstrate they have formalized their partnership with the technology vendor. They also need to articulate their status level and what that level means
- Their QA capabilities can effectively play the role of a quality gate and must be independent of the implementation/development team
- They bring automation capabilities rather than manual functional expertise.

Market Size & Growth

The global software testing services market size in 2023 is ~$42bn.

NelsonHall expects a deceleration in 2023 (+6%), led by mediocre GDP growth projections. This deceleration comes after solid growth in 2022 (+8%) driven by the digital and cloud catch-up that followed the 2020 pandemic.

Spending will reach $52bn in 2027, representing a +6% CAGR in the period 2022-2027.

Outlook

Functional testing represents most software testing services spending (82%). Its spending has specific dynamics resulting from the secular decline in manual testing, the rise of automation, the fast growth of digital testing, and the steadier acceptance of COTS testing.

Specialized testing activities cover non-functional, test support services, cognitive, and other activities (including UX testing). Organizations are turning to more specialized and technical testing activities as they expand their usage of automation (to test support services), consider the benefits of AI applied to QA, and emphasize non-functional. Overall specialized testing has a 10% CAGR, twice as fast as testing services overall.

NEAT Methodology for Quality Engineering

NelsonHall's (vendor) Evaluation & Assessment Tool (NEAT) is a method by which strategic sourcing managers can evaluate outsourcing vendors and is part of NelsonHall's *Speed-to-Source* initiative. The NEAT tool sits at the front-end of the vendor screening process and consists of a two-axis model: assessing vendors against their 'ability to deliver immediate benefit' to buy-side organizations and their 'ability to meet future client requirements'. The latter axis is a pragmatic assessment of the vendor's ability to take clients on an innovation journey over the lifetime of their next contract.

The 'ability to deliver immediate benefit' assessment is based on the criteria shown in Exhibit 1, typically reflecting the current maturity of the vendor's offerings, delivery capability, benefits achievement on behalf of clients, and customer presence.

The 'ability to meet future client requirements' assessment is based on the criteria shown in Exhibit 2, and provides a measure of the extent to which the supplier is well-positioned to support the customer journey over the life of a contract. This includes criteria such as the level of partnership established with clients, the mechanisms in place to drive innovation, the level of investment in the service, and the financial stability of the vendor.

The vendors covered in NelsonHall NEAT projects are typically the leaders in their fields. However, within this context, the categorization of vendors within NelsonHall NEAT projects is as follows:

- Leaders: vendors that exhibit both a high ability relative to their peers to deliver immediate benefit and a high capability relative to their peers to meet client future requirements
- High Achievers: vendors that exhibit a high ability relative to their peers to deliver immediate benefit but have scope to enhance their ability to meet client future requirements
- Innovators: vendors that exhibit a high capability relative to their peers to meet client future requirements but have scope to enhance their ability to deliver immediate benefit
- Major Players: other significant vendors for this service type.

The scoring of the vendors is based on a combination of analyst assessment, principally around measurements of the ability to deliver immediate benefit; and feedback from interviewing of vendor clients, principally in support of measurements of levels of partnership and ability to meet future client requirements.

Note that, to ensure maximum value to buy-side users (typically strategic sourcing managers), vendor participation in NelsonHall NEAT evaluations is free of charge and all key vendors are invited to participate at the outset of the project.

Exhibit 1

'Ability to deliver immediate benefit': Assessment criteria

Assessment Category	Assessment Criteria
Offerings	Continuous testing Application migration to the cloud QA AI-based analytics AI-based automation RPA-based automation UX research and testing: Usability UX research and testing: Accessibility UX testing: other Application security testing Enterprise application testing
Delivery	Indian delivery capability U.S. onshore capability EMEA onshore capability Offshore leverage
Presence	Customer presence globally Customer presence in N. America Customer presence in EMEA Customer presence in APAC Customer presence In LatAm
Benefits Achieved	Level of cost savings achieved Increased application quality/reduced production downtime Increased speed-to-market for digital initiatives Increased end-user/business satisfaction/UX Other benefits achieved Pricing approach

Exhibit 2

'Ability to meet client future requirements': Assessment criteria

Assessment Category	Assessment Criteria
Levels of Investment	Continuous testing Application migration to the cloud QA AI-based analytics AI-based automation RPA-based automation Usability testing Accessibility testing UX testing: Other Application security testing Enterprise application testing
Ability to Innovate	Mechanisms in place to deliver client automation innovation Extent to which client perceives that automation innovation has been delivered Suitability of vendor to meet future continuous testing needs of clients Suitability of vendor to meet future cognitive testing needs of clients Suitability of vendor to meet future UX testing needs of clients Perception of suitability to meet future needs for other technologies
Other	Market momentum Financial security

For more information on other NelsonHall NEAT evaluations, please contact the NelsonHall relationship manager listed below.

research.nelson-hall.com

Sales Inquiries

NelsonHall will be pleased to discuss how we can bring benefit to your organization. You can contact us via the following relationship manager:

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