

NEAT EVALUATION FOR NTT DATA:

Quality Engineering

Market Segment: Overall

Introduction

This is a custom report for NTT DATA presenting the findings of the NelsonHall NEAT vendor evaluation for *Quality Engineering* in the *Overall* market segment. It contains the NEAT graph of vendor performance, a summary vendor analysis of NTT DATA 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.

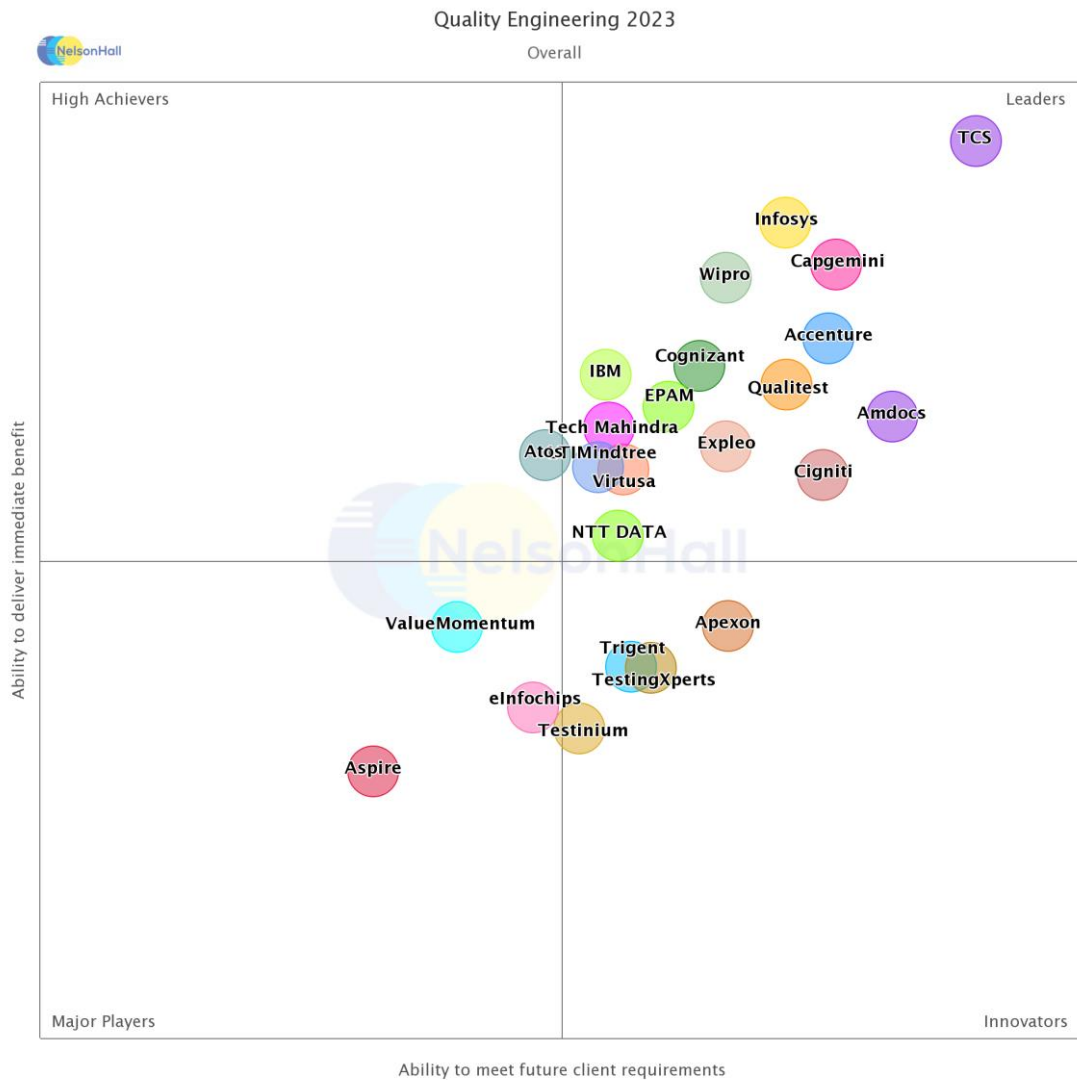
Evaluating vendors on both their ‘ability to deliver immediate benefit’ and their ‘ability to meet client future requirements’, vendors are identified in one of four categories: Leaders, High Achievers, Innovators, and Major Players.

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 (Overall)



NelsonHall has identified NTT DATA as a Leader in the *Overall* market segment, as shown in the NEAT graph. This market segment reflects NTT DATA’s overall ability to meet future client requirements as well as delivering immediate benefits to its quality engineering clients.

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 (*Overall*) [here](#).



Vendor Analysis Summary for NTT DATA

Overview

NTT DATA has ~19k QE practitioners in ~50 countries across its testing practices. The company services testing clients in verticals including financial services, insurance, healthcare, manufacturing, public sector, and telecom.

The global QE organization is part of NTT DATA's ADM units. The global group provides strategic direction and shares IP and innovation initiatives. It is structured in several CoEs, including for performance, automation, and UX. The global QE organization has P&L at the geography level.

NTT DATA has several QE priorities:

- Demonstrate to clients that testing is not a cost function but an investment, with defined areas of spending
- Accelerate the deployment of automation with clients, complementing the relocation of work to India and other offshore locations
- Use IP to differentiate its offering, away from pure people spending
- Introduce AI selectively with clients, targeting efficiency.

NTT DATA has its Quality Engineering Platform (QEP), which the company has designed as modular. QEP is a reference architecture with pre-integration primarily based on open-source software. NTT DATA takes a product view of QEP with a roadmap and continued investment. However, the company does not sell it but provides it as part of the service.

The company relies on BDD to automate test script generation. It has an iBDD to generate test scripts from the Gherkin language to Java/Selenium. NTT DATA highlights that it has fine-tuned the traditional Gherkin language transcription into test scripts with an NLP algorithm. It also highlights that iBDD adds to the Gherkin test cases, makes it usable with NLP models, and will create a more comprehensive test script to make it directly executable.

NTT DATA focuses on several offerings within UX testing, including accessibility testing. Several clients want to go beyond compliance and understand the UX of disabled users. NTT DATA works with disabled users testing the applications, who provide usability feedback, during the software development phase. It has automated, where possible, accessibility testing, e.g., image contrast.

Financials

NelsonHall estimates the testing revenues of NTT DATA to be in the \$1.5bn–\$2bn range.

Strengths

- *Continuous testing*: the offering is in line with the market. NTT DATA has expanded its continuous testing platform, QEP, well beyond continuous testing to include AI use cases and also BDD and MBT
- *AI-based analytics*: the offering is in line with the market, with a fairly comprehensive set of AI use cases



- *AI-based automation*: NTT DATA has a self-healing engine and has invested in complementing BDD with AI to improve the effectiveness of BDD. Also, NTT DATA believes in MBT. The company highlights it also works on AI-based automation using COTS
- *RPA*: NTT DATA is one of the few vendors that created RPA bots for its test automation needs. Its repository of ~5k RPA nodes is significant.

Challenges

- *Application migration to the cloud testing*: the offering is consulting-led. Still, it relies on little automation, apart from point solutions provided by the hyperscalers and several best practices (for autoscaling and fail-over). NTT DATA does, however, have IAC configuration files validation capabilities through using static code analysis
- *COTS/enterprise application testing*: NTT DATA relies on an expert-based approach, favoring the knowledge and experience of its practitioners. The level of investment in testing frameworks and supporting IPs is limited
- *Application security testing*: the offering is in line with the market and relatively common.

Outlook

NTT DATA has just merged its international operations with NTT Ltd., a unit encompassing a broad range of capabilities, including network, security, and connectivity services. NTT Ltd. comprised several units, including the legacy Dimension Data. It was a sizeable unit and doubled NTT DATA's international revenues.

The merger does not change the fundamental profile of NTT DATA's testing capabilities. However, NelsonHall expects it to expand its services portfolio around connected devices and IoT, networks, and connectivity in the form of certification, performance testing, and functional testing.

NTT DATA continues to believe in its decentralized model, which combines the importance of local operations with a Global CoE to coordinate QE practices, service portfolios, and IPs across the firm. We think that NTT DATA's approach is both its greatest strength (as it brings proximity to its clients) and a weakness, as it requires significant coordination effort across the firm and, typically, limited usage of offshore delivery for its testing activities compared to its peers. NTT DATA is highly aware of the strengths and weaknesses of its model, and we expect it, especially in the current mixed economic conditions, to shift its delivery toward India and other nearshore locations (primarily South America).



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	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> Indian delivery capability U.S. onshore capability EMEA onshore capability Offshore leverage
Presence	<ul style="list-style-type: none"> Customer presence globally Customer presence in N. America Customer presence in EMEA Customer presence in APAC Customer presence In LatAm
Benefits Achieved	<ul style="list-style-type: none"> 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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