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RESEARCH

Next-generation QA Services – From Mundane Existence to Innovation Engine

Application Services

State of the Market Report – February 2020: Complimentary Abstract / Table of Contents

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Table of contents

Topic	Page no.
Introduction and overview	4
Market deep dive	8
Implications	18
Appendix	27

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Background and methodology of the research

Enterprises aiming to jump on the transformation bandwagon are exploring new-age technologies to provide them the differentiating edge, enabling business model evolution and expansion of business boundaries. However, to support the quest of achieving the desired benefits without impairing existing operations, comprehensive Quality Assurance (QA) for these next-generation technologies becomes essential. Next-generation QA is not only limited to the knowledge of emerging technologies, but also involves quality engineers working with more agile, shift-left, inclusive, and automation-led delivery models.

To help enterprises in their journey, service providers' trifecta – people, process, and technology – needs to be aligned toward emerging business imperatives. Also, as quality engineers permeate further in the overall development process, in a multi-vendor construct, aspects such as coordination, responsibility sharing, and timeline management require mature engagement and governance models.

In this research study, we analyze the global next-generation QA services landscape. We focus on:

- Evolving market dynamics and emerging service provider trends
- Key steps an enterprise need to take to ensure application certainty and consistent customer experience
- Implications for service providers and enterprises as market evolves

Methodology of this report includes:

- Everest Group's annual RFI process for the calendar year 2019
- Interactions with leading net-generation QA service providers
- Client references
- Analysis of next-generation QA services market

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Scope of research for next-generation QA services

Next-generation QA services: Inclusions

Specific methodologies in testing for next-generation technologies

Immersive technologies

- Immersion testing for AR/VR/MR
- Hardware compatibility testing

AI systems

- Data validation
- Data transformation testing
- Output validation
- Core algorithm testing

Cloud native applications

- Component testing
- Inter-services communication testing
- Chaos engineering

Distributed ledger technologies

- Smart contract testing
- Node/peer testing
- Node connectivity testing

Connected ecosystems (IoT)

- Interoperability testing
- Compatibility testing
- Network connectivity testing

Big data applications[1] (other than IoT/AI systems)

- Data ingestion testing
- Data staging validation
- Data processing validation

Other QA services applicable for next-generation applications

Functional testing

- Unit testing
- Integration testing
- System testing
- Regression testing
- Acceptance testing

Non-functional testing

- Performance testing
- Security testing
- User interface testing
- Usability testing
- Compatibility testing
- API testing
- Recovery and failover testing

1 Such as ecommerce applications and social media applications

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Overview and abbreviated summary of key messages

In this research, we present a comprehensive analysis of the next-generation QA services market, covering aspects of enterprise demand themes, consumption patterns, and provide an easy to follow playbook for enterprises as a starting point to begin their transformation journey.

Some of the findings in this report, among others, are:

- **QA needs to be budgeted for activities beyond application development**
- **Technology or automation is not a panacea, need to transform QA execution**
- **Pi-shaped talent expertise is essential to drive better business-IT alignment**
- **QA organization needs to be fluid and evolve to address varied objectives**
- **QA needs a broader role as a process transformation engine with higher visibility**

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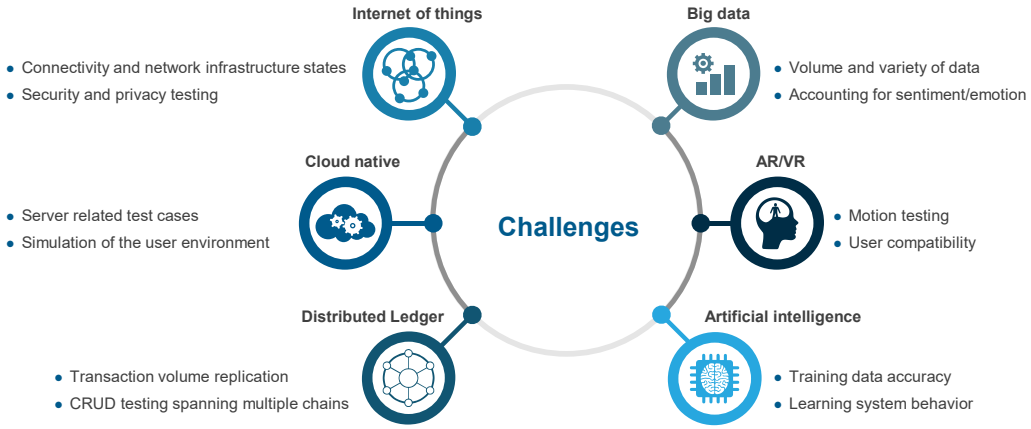
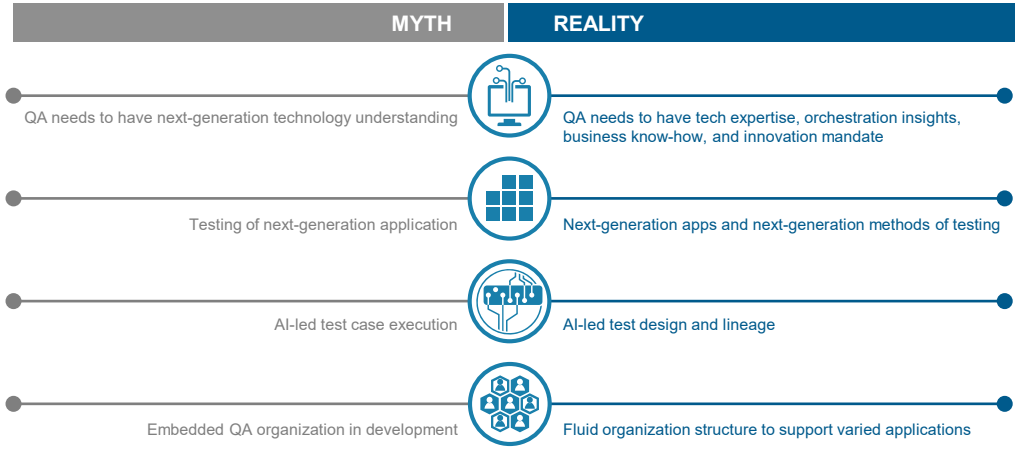
This study offers three distinct chapters providing a deep dive into key aspects of next-generation QA services market; below are four charts to illustrate the depth of the report

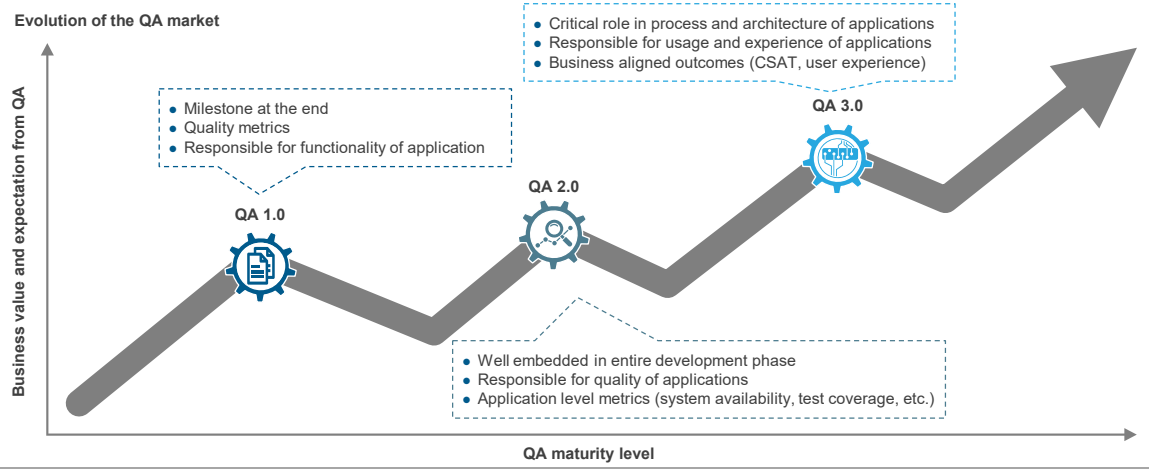
Key challenges faced while assuring quality – by technology



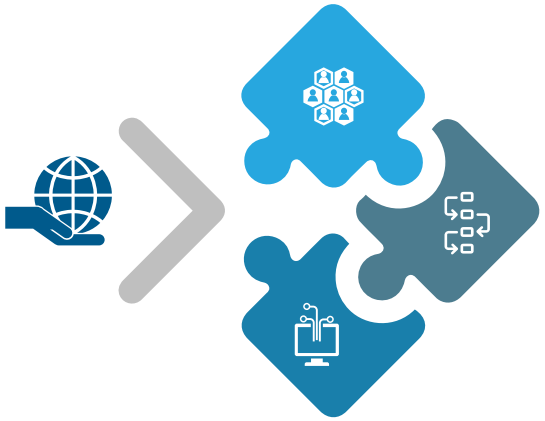
Illustrating the gap between perception and reality



Evolution of Quality Assurance over the years



Essential components of QA transformation



Organization and people
- Redefining talent requirements
- Dynamic QA organization structure

Methodology
- Rethinking authorizations and metrics
- Shifting involvement in the application value chain

Technology
- Enabling better agility, quality, and coverage
- Replicating complex & contextualized scenarios

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Research calendar – Application Services

Published | Planned | Current release

Flagship Application Services reports	Release date
Application Services – Annual Report 2019: Balancing The Legacy And New Applications	June 2019
DevOps Services PEAK Matrix® Assessment and Market Trends 2019 – Siloed DevOps is No DevOps!	July 2019
Next-generation Quality Assurance (QA) Services PEAK Matrix® Assessment 2020	November 2019
Application Transformation Services PEAK Matrix® Assessment 2020	December 2019
Application Transformation – Business Pioneering the Agenda – State of the Market	January 2020
Next-generation QA Services – From Mundane Existence to Innovation Engine	**February 2020**
Cloud-native Application Development Services PEAK Matrix® Assessment 2020	Q2 2020

Thematic Application Services reports	
Upcoming Contract Renewals – Application Services 2019	January 2019
Assuring Trust in a Converging Life Sciences Ecosystem: The Emerging Role of Quality Assurance	February 2019
Harnessing Operational Insights for Digital Transformation	July 2019
Establishing a Strategic Business Case for Enterprise IT Automation	September 2019
Future Proofing Your IT Services Model - Outsourcing for the Digital Age	October 2019
Breakthrough Transformation	October 2019
Talent Readiness for Next-generation IT Services PEAK Matrix® Assessment 2020 – Closing the Demand-Supply Gap New	December 2019
Upcoming Contract Renewals – Application Services 2020	Q1 2020

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Additional Application Services research references

The following documents are recommended for additional insight into the topic covered in this report. The recommended documents either provide additional details or complementary content that may be of interest

1. **Application Transformation Services PEAK Matrix® Assessment** (EGR-2019-32-R-3449): Application transformation has emerged as the key for enterprises to keep up with the evolving market dynamics. Enterprises are transforming their applications to control costs and enhance user experience. However, even with a clearly defined business objective, some of these enterprises are unable to envision their transformation journey. Service providers are expected to act as partners in this journey toward achieving application transformation. In this research, we present the assessment and detailed profiles of 24 IT service providers featured on the application transformation services PEAK Matrix®

2. **Everest Group – Next-generation QA Services PEAK Matrix® Assessment 2020** (EGR-2019-32-R-3449): With enterprises looking at new-age technologies for differentiation, next-generation Quality Assurance (QA) is evolving from the knowledge of emerging technologies to include quality engineers working with more agile, shift-left, inclusive, and automation-led delivery models. To help enterprises in this journey, service providers need to be aligned to emerging business imperatives and invest in talent development and innovative proprietary solutions. In this research, we present an assessment and detailed profiles of 19 next-generation QA service providers featured on the Everest Group Next-generation QA Services PEAK Matrix®

3. **Enterprise QA Services PEAK Matrix® Assessment 2018: Quality Assurance to Brand Assurance: AI Driving the Evolution** (EGR-2018-32-R-2639); 2018: The QA landscape has been evolving over the past decade and there is a clear shift from independent testing of applications to a more holistic brand assurance of business processes and outcomes. Service providers are investing in Artificial Intelligence (AI) and Machine Learning (ML) to expand their test automation suite of tools, and even include performance and security testing into the continuous delivery model, thus enabling brand assurance for their clients' business. In this research, we present the assessment and detailed profiles of 23 IT service providers featured on the QA services PEAK Matrix®

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