IDC MarketScape: Worldwide Enterprise Automated Software Quality and Continuous Testing for Digital Execution 2022 Vendor Assessment

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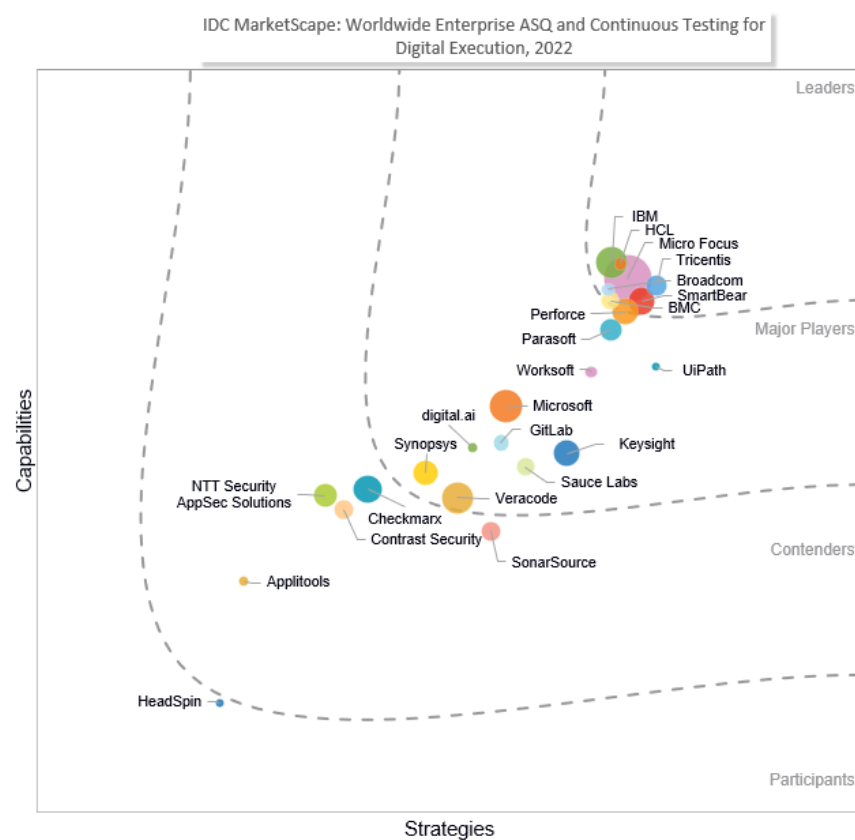
THIS IDC MARKETSCAPE EXCERPT FEATURES MICRO FOCUS

IDC MARKETSCAPE FIGURE

FIGURE 1

IDC MarketScape Worldwide Enterprise Automated Software Quality and Continuous Testing for Digital Execution Vendor Assessment

IDC MarketScape: Worldwide Enterprise ASQ and Continuous Testing for Digital Execution, 2022

Source: IDC, 2022

Please see the Appendix for detailed methodology, market definition, and scoring criteria.

IN THIS EXCERPT

The content for this excerpt was taken directly from IDC MarketScape: Worldwide Enterprise Automated Software Quality and Continuous Testing for Digital Execution 2022 Vendor Assessment (Doc # US47097621). All or parts of the following sections are included in this excerpt: IDC Opinion, IDC MarketScape Vendor Inclusion Criteria, Essential Guidance, Vendor Summary Profile, Appendix and Learn More. Also included is Figure 1 and 2.

IDC OPINION

High-quality, adaptive, resilient, and secure software delivered with velocity enabled our dynamic shift to digitization, hybrid work, and business innovation and execution over the past years during the COVID-19 pandemic, and now moving into 2022-2023 and beyond. Automation played and continues to play a key role — developers cite lack of automation as the primary inhibitor to productivity in IDC's *PaaSView and the Developer* survey research (of around 1,000 participants worldwide who responded to that question). Continuous testing processes with sufficient functionality across core areas of increasingly complex deployments enable DevOps and faster releases — no business is able to afford the costs of releasing irrelevant, broken, poorly performing, and insecure code more quickly. Compressed time frames demand test automation and rapid transitions to continuous testing.

For that reason, this enterprise ASQ IDC MarketScape encompasses high-end portfolios with deep and broad ASQ capabilities. We also see a shortage of skilled, professional developers who benefit increasingly from low-code and no-code development and the emergence of "citizen developers" (who also have visibility into core business needs, but little or no experience with testing). Automation in this context fuels digital transformation. We see organizations trending toward machine learning (ML) and artificial intelligence (AI) as well as seeing intelligent process automation (IPA) and robotic process automation (RPA) expanding beyond business areas (such as HR) into IT and software quality initiatives into testing and software quality as well as a longer-term commitment to intelligent analytics with ML and AI.

So the requirement to deploy secure applications across mixed environments — from web to mobile to cloud to embedded at agile speeds with complex global sourcing and demand for collaborative hybrid work for business and big data analytics — necessitate a variegated approach to quality and to software deployment. For this reason, IDC's evaluation criteria for enterprise automated software quality incorporate breadth and depth across areas for combined ASQ capabilities with a continuous, "end to end" application life-cycle approach through deployment for DevOps. For enterprises, it is neither enough nor effective to leverage testing phases, capabilities, and delivery platforms in isolation. This study — and three related IDC MarketScape documents for ASQ assessments completed in coordination with one another — examines ASQ adoption patterns and trends and how they are impacting business success and ASQ solution availability from high-end providers and from smaller, innovative testing and ASQ vendors. Specifically, key strategy measures for enterprise ASQ success include the following:

- Enterprise ASQ capabilities require high-end, deep, broad, and modern functionality from core traditional areas for quality, including performance and functional testing, test management, and methodology frameworks from software inception to service virtualization, deployment, containerization, business quality, API testing, and beyond.

- Successful enterprise quality strategies must include key emerging areas such as mobile, cloud and SaaS, agile, and release management with DevOps and/or incorporate support for system-of-record (SOR) legacy environments.

- ASQ exists in conjunction with other life-cycle phases and, given the complexity of today's current environments, must coordinate with key areas such as requirements, software change management and version control, continuous integration (CI) and continuous release (CR), value stream management (VSM), and project and portfolio management (PPM) to help prioritize resource and project allocation.

- Enterprise ASQ demands effective process frameworks (including agile), organizational strategy, and close partner relationships, given the complexity of G2000 sourcing strategies for application development (AD). Leading vendors leverage relationships with technology and service providers and incorporate strategies for open source solutions as well.

- Systems of record encompassing legacy mainframe systems and business applications must increasingly be incorporated into DevOps quality and end-to-end deployment strategies.

IDC MARKETSCAPE VENDOR INCLUSION CRITERIA

IDC structured its approach to inclusion of vendors in the enterprise ASQ category based on the strength of their products' ASQ capabilities and strategy, revenue share in part (as indicators of adoption and staying power), and/or differentiated position and capabilities in rapidly emerging markets of concern. IDC evaluated 24 vendors for inclusion in the 2022 IDC MarketScape for enterprise ASQ (up from 19 vendors in our previous assessment, several of which were acquired).

Criteria for inclusion include the following:

- Sufficient automated software quality capabilities available in key areas of concern for IDC clients and/or related innovative positioning (e.g., test management, test data management, performance and functional testing, code analytics, service virtualization, agile and continuous testing, mobile testing, digital quality, application security testing [AST] and software composition analysis [SCA], and/or mainframe and business application testing)

- Appeared in IDC discussions with end-user clients as part of RFP and other inquiry for ASQ during 2021-2022

- A minimum overall revenue of $20 million for CY21, with at least $10 million of that revenue from ASQ

Smaller, targeted vendors with engaging functionality and focus were also included in this study to provide context for emerging areas of importance (even if they do not have a full portfolio of enterprise capabilities). Vendors evaluated in this IDC MarketScape are Applitools, BMC, Broadcom, Checkmarx, Contrast Security, digital.ai, GitLab, HCL, HeadSpin, IBM, Keysight (formerly Eggplant), Micro Focus, Microsoft, NTT Security AppSec Solutions (formerly WhiteHat Security), Parasoft, Perforce, Sauce Labs, SmartBear, SonarSource, Synopsys, Tricentis, UiPath, Veracode, and Worksoft.

The focus for customers is on ASQ breadth and depth; scalability, coordination with end-to-end DevOps life-cycle management, and strong data analytics as well as process support for systemic adoption and engagement have been key drivers for leadership. At the same time, with the rapid increase of low-code and no-code development and microservices, key emerging trends for enterprise ASQ are increased demand for intuitive and modern testing approaches, the ability to test APIs (as the underlying integration layer), emerging support of improved analytics with ML and AI, and early

leverage of robotic process automation as part of testing. Also essential is the role of application security testing as part of DevSecOps. So combined approaches in this context for enterprise ASQ are key. Emerging support for digital quality and "edge" platforms as well as availability and support of the cloud and cloud applications are also a part of our assessment. So this IDC MarketScape for worldwide enterprise ASQ and continuous testing for digital execution includes all vendors with capabilities across the areas for which IDC provides in-depth analysis in the other three vendor assessments.

ADVICE FOR TECHNOLOGY BUYERS

Relevant, high-quality, dynamically performing, adaptive, and secure software drives business innovation and success now more than ever. Application quality remains challenging for companies as they continue to deal with an unpredictable and challenging global economy with constrained and erratically available resources at the same time, dramatically increased software deployment, and technology complexity with faster iterative release time frames. According to our most recent DevOps research (1Q22), nearly all (90.5%) organizations surveyed are releasing features with a lead time of a month or less, an increase of 26 percentage points from 2020 (see *U.S. Accelerated Application Delivery Survey,* IDC #US47924622, January 2022). In addition, organizations delivering features in 1-2 weeks doubled from 2020 to 2021. This significantly compresses time frames for quality and testing, demanding a commensurate shift to agile and adaptive testing processes. Also in that context, organizations must incorporate application security testing and code analytics, coordinating design and quality strategies to encompass software resilience in the face of increasingly virulent attacks and risks (with high-speed deployments).

Effective strategies, decision making, and software quality execution mean the difference between corporate flexibility, evolution, and success – or in other cases, software failure (including negative consequences to transactions, corporate reputation and, potentially, entire businesses). There is little leeway for poor software quality as companies deal with a volatile economic, business, and political climate that remains erratic with ongoing consequences from the pandemic, along with increasingly complex sourcing and deployments (from legacy to mobile to Internet of Things [IoT] platforms) with less internal development and quality assurance (QA) resources than were in place 18-24 months ago.

With volatile international economic dynamics and other factors (including corporate responsibility), risk, trust, and compliance initiatives are growing in scope and impact and must be met by effective quality approaches in conjunction with requirements and change management/auditing. Modern development is engaging organizations in microservices and codeless development while still often requiring coordination with system of record on legacy platforms (even as those with knowledge about how to access and maintain those platforms are retiring in increasing numbers).

Effective strategies and decision making for quality assurance, value, risk, and quality control remain a matter of survival in the current dynamic technology, international economy, and regulatory climate (as emerging technologies and adaptive software drive global businesses).

In addition, IDC has seen ongoing investments in complex sourcing for software development projects. This continues the existing trend for combining internal IT resources with contractors, both onshore and offshore providers, as well as significant increases in use of open source. With declining internal resources, as companies have been engaged with service providers, the demand for effective software project collaboration and coordination has increased geometrically.

Software quality automation – using tools with appropriate capabilities and process support, combined with effective organizational strategies – is more important than ever for successful software implementations. It is in part due to this increase in multisource software projects that IDC has chosen to focus on combined ASQ portfolio suites for enterprise ASQ, incorporating emerging technologies and trends (mobile and digital innovation, cloud, and quality and continuous testing related to DevOps and DevSecOps), digital transformation/digital quality, quality/security, and cloud testing. ASQ solutions in this context can give a basis for successful collaboration and metrics, where communication between far-flung, hybrid resources and communities across multiple corporate and global cultures and use of open source is a necessity (and where long-term deployment and service management assessments and costs are a core factor of the end-to-end software DevOps life cycle). We also see increasing use of open source software (OSS), which brings both benefits and risks that bring demand focus, management and associated opportunities for both reuse and remediation.

Yet implementation of these products remains challenging from a behavioral and organizational perspective and costly for enterprise adoption. Human beings are wired more for consistency than for change. For companies to succeed with ASQ, user buy-in and consistent adoption are key, which demand process and behavioral changes. Dated, inadequate, or nonexistent project quality information and poor testing data torpedo successful software quality execution.
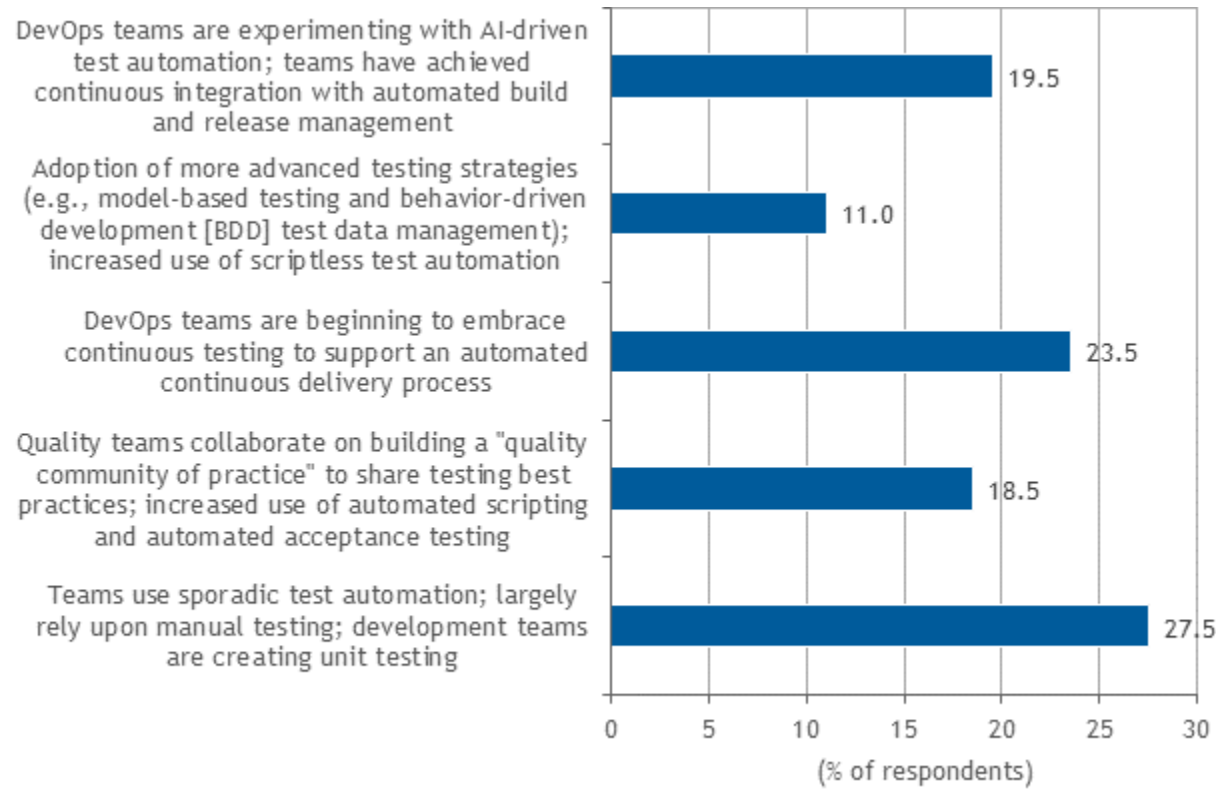
We see companies approaching this in a variety of ways, based on their needs and maturity. Lightweight ASQ solutions can be more quickly adopted for small and medium-sized businesses (SMBs). Targeted ASQ capabilities enable focused adoption for core areas (e.g., static and/or dynamic analysis, memory leak detection, and agile testing). Global enterprise organizations tend to require high-end, functionally broad, and rich ASQ products. In both contexts, we see many users evaluating and opting for flexible delivery models for adaptive infrastructure access for testing in the cloud and to enable faster adoption (with on-demand hosted and ASQ SaaS). Moreover, we see enterprise solutions seeking to "shift left" to become more agile and to enable modern development.

Our most recent DevOps survey research also shows that a majority of DevOps teams (at 72.5%) have increased engagement with advanced software testing and quality strategies such as use of AI and ML, continuous testing as part of continuous deployments, and leveraging communities of practice, although the remainder continue to evolve and/or deal with a mix of manual testing and sporadic use of test automation (see Figure 2).

FIGURE 2

Organizational Approach to Software Quality

Q.   What best describes your organization's approach to software quality?

n = 200

Source: IDC's *Accelerated App Delivery Survey,* August 2021

The purpose of this ASQ study and the other three companion IDC MarketScape documents is to enable context for purchase decisions in those areas of the ASQ market where we see most activity and a need for guidance. Adoption must be accompanied with organizational and process changes, and we consistently heard as we spoke with the 70 or so references as part of this study that continuous testing, agile approaches, and continuous integration to enable quality software as part of an end-to-end DevOps strategy were top of mind as part of automation decisions.

VENDOR SUMMARY PROFILES

This section explains IDC's key observations resulting in a vendor's position in the IDC MarketScape. While every vendor is evaluated against each of the criteria outlined in the Appendix, the description here provides a summary of each vendor's strengths and challenges.

Micro Focus

Micro Focus is positioned in the Leaders category in the 2022 IDC MarketScape for worldwide enterprise ASQ and continuous testing for digital execution.

Micro Focus products considered as part of this vendor assessment in this research initiative include ALM Octane, ALM/Quality Center, LoadRunner family (Professional, Enterprise, Cloud, and Developer), UFT family (One, Developer, and Mobile), Enterprise Test Server, Service Virtualization, Fortify Static Code Analyzer, Fortify WebInspect, Fortify on Demand, and Enterprise Developer.

Micro Focus was founded in 1976 and is based in Newbury, England. Currently, Micro Focus employs over 12,000 people across 48 countries, serving more than 15,000 customers across its ASQ and other products. The company has grown primarily by acquisition, with one of the most impactful for its ASQ portfolio being the merger with HPE's software business segment in September 2017. This merger brought Micro Focus several of its current primary ASQ (and DevOps) products, including ALM Octane and Quality Center, UFT, LoadRunner, and Service Virtualization. Since 2018, Micro Focus has worked to streamline its ASQ product ecosystem, reshaping its portfolio from 35 distinct products to 8 marketed products/families in 2021. Micro Focus is well positioned to enable enterprise ASQ due to its products' broad and deep testing capabilities supported by tools for PPM, ALM, mainframe modernization, and value stream management. This research initiative also coordinates software quality analysis with application security testing. We increasingly observe the need to bring these teams together (along with those architecting applications to design for greater resilience). Most recently, in 1Q22, Micro Focus' security business unit CyberRes acquired the cloud-native SCA provider Debricked to augment its existing security capabilities and enable users to better assess, leverage, and secure open source software (OSS) components.

Company Strategy

Micro Focus has two main product groups for quality testing: the LoadRunner family and the UFT family. LoadRunner provides the ability to create, define, debug, and execute load tests at scale. LoadRunner supports testing of over 50 technologies and application environments, can scale to as many as 5 million users, and integrates with IDEs to shift testing left via LoadRunner Developer. The product is available in several versions: Professional for colocated teams, Enterprise for globally distributed teams, and Cloud for running performance tests without deploying and managing infrastructure. The UFT products offer functional testing and automation for more than 200 GUI and API technologies and centralize the testing architecture layers, including presentation, business logic, database, components, services, and APIs. UFT One provides functional testing with one tool across web, mobile, API, and enterprise applications, as well as AI-powered test automation. UFT Developer is designed for continuous testing and continuous integration by delivering GUI testing capabilities within the IDE of choice. UFT Mobile supports mobile device testing by providing a lab and management via on-premises devices, hosted remotely or emulated. Finally, UFT Sprinter's goal is to enable efficient manual testing through capabilities such as data injection, automated defect scanners, and autogenerated documentation. Micro Focus' Service Virtualization product supports all these testing capabilities, providing a single solution for creating virtual services across unit, functional, and performance testing.

In addition to the LoadRunner family, Micro Focus also provides functional testing for IBM mainframe applications in Enterprise Test Server. The product leverages virtualized hardware on premises or in the cloud to reduce costs and to help scale test capacity. Enterprise Test Server can be aligned with

other Micro Focus solutions to provide pipeline execution, extending the ability to automate testing processes for mainframe applications.

Micro Focus' Fortify family of products offers security testing including SAST, DAST, IAST, and SCA. Fortify Static Code Analyzer analyzes source code, bytecode, or binaries and offers broad language coverage across 27 languages. Fortify WebInspect provides DAST via crawling and auditing along with guided scans, templates, and reports. The product is supported by Fortify's Software Security Research (SSR) team for quarterly security check/rulepack content. WebInspect currently covers over 3,400 checks, including new updates for XPath Injection and Server-Side Template Injection. IAST is offered via Fortify on Demand, Micro Focus' application security as a service. An active, rather than passive, IAST, the solution leverages WebInspect's crawling and auditing capabilities to provide both server-side and client-side vulnerability detection. In addition, Fortify on Demand offers discovery scans for identifying web applications and APIs and the option to have test results reviewed by Micro Focus' security experts. SCA is also offered via partnership through Fortify on Demand, a capability powered by an OEM relationship with Sonatype. This SCA capability is enabled by a command line-based build tool that combines both Fortify and Sonatype scanning steps into one command that can be integrated with any build pipeline for automation purposes. Finally, Fortify provides on-premises, public cloud, and SaaS offerings, with testing services layered on as an option.

Micro Focus synchronizes both quality and security testing capabilities with agile and DevOps processes via ALM Octane and ALM/Quality Center. The products act as a central hub, unifying and calibrating testing efforts, providing dashboards for analytics and insights, as well as release governance capabilities.

Micro Focus is differentiated by its broad and deep support, with testing capabilities from mainframes to containers, and across OSs, browsers, devices, protocols, and GUI frameworks. For example, the UFT family of products allows for the automated testing of around 200 GUI and API technologies across mobile, web, desktop, and mainframe. Another differentiator for Micro Focus is the ability to scale implementations from small teams to distributed, global organizations. Micro Focus' licensing and consumption model is flexible and includes SaaS, public cloud, or on premises and is supported by enterprise credential support and flexible implementation configuration. For example, LoadRunner Cloud scales leveraging Kubernetes and Docker containers, and many components of Micro Focus' ASQ portfolio are multitenant. Finally, Micro Focus is built on a composable and open service architecture that enables integration between Micro Focus products, open source, and third-party software. Further, Micro Focus enables traceability and analyzability with a data lake that collates data across the integrated tools.

References with whom IDC spoke experienced an increase in velocity using Micro Focus ASQ products. One customer cited application release frequency went from 5 weeks to 12 days. Another reference noted that manual testing of one of the company's forms would take five minutes manually, and with Micro Focus products, its team could process 20-30 forms in the same amount of time. Customers echoed that Micro Focus products freed up resources to allow testers to focus on more complex scenarios and exploratory testing.

Strengths

Micro Focus' strengths lie in the formidable technical breadth and depth of the company's portfolio. Micro Focus' ASQ offerings provide a comprehensive solution that spans the software development and testing life cycle from ideation to production and includes synergistic capabilities such as portfolio management; application governance and analytics; functional, performance, and security testing; and

release management. The company's strengths also lie in a user base, which Micro Focus can target with its modernizing product portfolio, looking to the organization's products to move forward into agile DevOps and modern development. These combined factors contribute to Micro Focus' position in the market.

Challenges

As a long-term, established ASQ provider with a complex portfolio and established customer base, one of Micro Focus' challenges is how to innovate and adapt to dynamically changing technology, business, organizational, and process needs while bringing along both its product line and people. While users change behavior with reluctance, smaller, innovative, and emerging ASQ companies target Micro Focus, resulting in some customer attrition. As a result, Micro Focus must evolve and optimize product capabilities, improve user interface design, target modern development, and continue to innovate on flexible pricing and adaptive sales approaches. In addition, the company has seen leadership turn over recently, which can hamper execution. At the same time, Micro Focus has made significant strides in honing its portfolio through a combination of pragmatic and astute consolidation, product retirement, and capability merging with simplified naming and packaging approaches. But the challenge remains to effectively articulate the range and scale of the company's product capabilities. And despite the breadth of its portfolio, there are emerging capabilities that Micro Focus would benefit from adding (e.g., IaC security in Fortify).

APPENDIX

Reading an IDC MarketScape Graph

For the purposes of this analysis, IDC divided potential key measures for success into two primary categories: capabilities and strategies.

Positioning on the y-axis reflects the vendor's current capabilities and menu of services and how well aligned the vendor is to customer needs. The capabilities category focuses on the capabilities of the company and product today, here and now. Under this category, IDC analysts will look at how well a vendor is building/delivering capabilities that enable it to execute its chosen strategy in the market.

Positioning on the x-axis, or strategies axis, indicates how well the vendor's future strategy aligns with what customers will require in three to five years. The strategies category focuses on high-level decisions and underlying assumptions about offerings, customer segments, and business and go-to-market plans for the next three to five years.

The size of the individual vendor markers in the IDC MarketScape represents the market share of each individual vendor within the specific market segment being assessed.

Key trends driving user adoption include the urgent need to "shift left" with continuous testing by applying agile approaches to quality practices to avert the expense and reputational damage of finding code problems in production. We also increasingly see coordination between quality and security testing – the opportunity to design and architect up front for resilience and the ability to leverage emerging AI and ML capabilities to evolve better quality hygiene, processes, and workflows to improve code quality at a time of urgent demand for fast deployments. The emergence of multimodal platforms beyond mobile, including mixed reality and IoT, will continue to drive opportunities for creativity on the part of test automation vendors and broader engagement. Along with the democratization of development with no-code/low-code approaches, there is a commensurate demand to incorporate

testing into these environments so that nonprofessional developers can create better quality code. Leverage of machine learning and artificial intelligence in that context becomes increasingly important. The rise of APIs as the enabling technology for services development in these environments and of RPA brings additional opportunities to automation of mundane repetitive tasks and to help ensure the quality of these enabling technologies. For these reasons, in part, we are bullish about the ASQ adoption and coordination with key organizational and process change for DevOps and DevSecOps moving forward.

IDC MarketScape Methodology

IDC MarketScape criteria selection, weightings, and vendor scores represent well-researched IDC judgment about the market and specific vendors. IDC analysts tailor the range of standard characteristics by which vendors are measured through structured discussions, surveys, and interviews with market leaders, participants, and end users. Market weightings are based on user interviews, buyer surveys, and the input of IDC experts in each market. IDC analysts base individual vendor scores, and ultimately vendor positions on the IDC MarketScape, on detailed surveys and interviews with the vendors, publicly available information, and end-user experiences in an effort to provide an accurate and consistent assessment of each vendor's characteristics, behavior, and capability.

Market Definition

Automated software quality (ASQ) tools support software unit testing, system testing, user integration testing, and software quality assurance. Functions such as test specification, generation, execution, results analysis, "bug tracking," test data and QA management, functional/regression, and stress and load testing are included in this category. ASQ SaaS and testing in the cloud and of cloud applications (private, public, and hybrid), virtual test lab management, and service virtualization as well as software quality analysis and measurement are included in this category. Emerging platform and software testing support for mobile, video, crowdsourcing, end-user experience, embedded software quality, and other areas (e.g., enterprise resource planning and mainframe) are also included in this category. The software quality analysis and measurement aspect of ASQ consists of software tools that enable organizations to observe, measure, and evaluate software complexity, size, productivity, and risk. Examples of capabilities provided by these software analysis tools include architectural assessment of design consequences (on software performance, stability, adaptability, and maintainability), static analysis, dynamic analysis, and quality metrics for complexity, size, risk, and productivity to establish baselines and to help judge project progress and resource capabilities.

LEARN MORE

Related Research

- ▪ *IDC MarketScape: Worldwide Application Security Testing, Code Analytics, and Software Composition Analysis 2022 Vendor Assessment - Coordinating Security and Quality for Resilience and DevSecOps* (IDC #US47097521, forthcoming)
- ▪ *IDC MarketScape: Worldwide Cloud Testing 2022 Vendor Assessment — Empowering Velocity* (IDC #US47097221, March 2022)
- ▪ *IDC MarketScape: Worldwide Mobile Testing and Digital Quality 2022 Vendor Assessment — Enabling Multimodal Dynamism for Digital Innovation* (IDC #US47097321, forthcoming)

- *Addressing Quality for Customer Communications Infrastructure and Engagement: Strategies to Manage Complexity and Optimize the Business* (IDC #US48467821, December 2021)

- *Market Analysis Perspective: Worldwide Agile ALM, Quality, and Portfolio Strategies, 2021 - Dynamic Coordination for Quality DevOps Delivery* (IDC #US47148721, September 2021)

- *IDC PeerScape: Practices for Enabling Innovation with Agile Quality, Continuous Testing and Modern Development* (IDC #US47917321, June 2021)

- *Worldwide Automated Software Quality Forecast, 2021-2025: Digital Transformation Demands Quality and Drives Growth* (IDC #US47916121, June 2021)

- *Worldwide Automated Software Quality Market Shares, 2020: Rapid Digitization Impels Ongoing Quality Adoption* (IDC #US47916021, June 2021)

- *IDC's Worldwide Software Taxonomy, 2021* (IDC #US47588620, April 2021)

Synopsis

This IDC study uses the IDC MarketScape model to provide an assessment for enterprise automated software quality (ASQ) as one of four assessment views across key areas of the market – enterprise ASQ/continuous testing; application security testing, code analytics, and software composition analysis; mobile testing and digital quality; and cloud testing. Organizations seeking product automation capabilities, processes, and services for ASQ come to their decision making with varying levels of maturity, differing pain points, and challenges. This is even more the case with the dramatic shift over the past few years to digital innovation and hybrid work in a global economy that remains volatile in the wake of the pandemic, geopolitical and environmental disruptions, and the imperative for trust, corporate responsibility, and diversity. IDC research shows increased engagement by a majority of DevOps teams with advanced approaches to quality and testing, as companies continue to struggle with constrained and complex sourcing, limited QA resources, and varying levels of flexibility to meet business and competitive pressures. The intent with IDC's enterprise ASQ criteria and four-document series is to provide differently weighted criteria and perspectives for the areas of greatest importance that come up for users making testing and ASQ selections currently with transformative demands for security, mobile, cloud, IoT, AR/VR, and other areas. Too frequently, users and vendors see "one" sample market assessment diagram and assume that a single model for the market will directly address all their needs (with little context for user-specific challenges or variegated maturity levels). We believe that in-context weighting and analysis for this category is optimal to enable pragmatic insight for users making decisions in a dynamic, increasingly chaotic, complex global competitive environment. Publishing multiple IDC MarketScape documents for ASQ can enable decision makers to "see" varying approaches based on their peers' experiences, as they assess IDC's analysis.

"IDC has seen a dramatic increase in engagement with continuous testing across DevOps and DevSecOps areas, and also the targeting of multimodal deployment across complex platforms and emerging technologies, and leverage of ML, AI for advanced analytics, and emerging use of RPA to automate error-prone, tedious manual processes. With teams dispersed as a result of hybrid work, intensification of compliance demands globally, and significantly compressed cycle times with increased daily and weekly deployments, continuous integration, and agile DevOps approaches, the demand for effective quality automation and processes has increased geometrically," said Melinda Ballou, research director for IDC's Agile Application Life-Cycle Management, Quality and Portfolio Strategies service. "Enterprise ASQ exemplifies broader portfolio coordination with ALM and capabilities for emerging platforms with digital innovation (including embedded, mobile, cloud, IoT, and other areas). So IDC has chosen to prioritize combined capabilities for ASQ across key use cases.

Enterprise ASQ solutions can provide a basis for quality collaboration for end-to-end DevOps. While this IDC MarketScape focuses on enterprise ASQ, IDC has chosen the context of three additional sample software quality weighting strategies that have currency moving into 2022 and are frequently requested by users speaking with us – security testing, code analytics, and software composition analysis; mobile testing and digital quality; and cloud testing. Global organizations seeking to coordinate continuous DevOps and other areas demand high levels of functionality, scalability, and maturity overall to execute well (for an "enterprise" ASQ view)."

About IDC

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