



IDC MarketScape

IDC MarketScape: Worldwide Cloud Testing and ASQ SaaS 2017-2018 Vendor Assessment — Enabling Quality in and on the Cloud

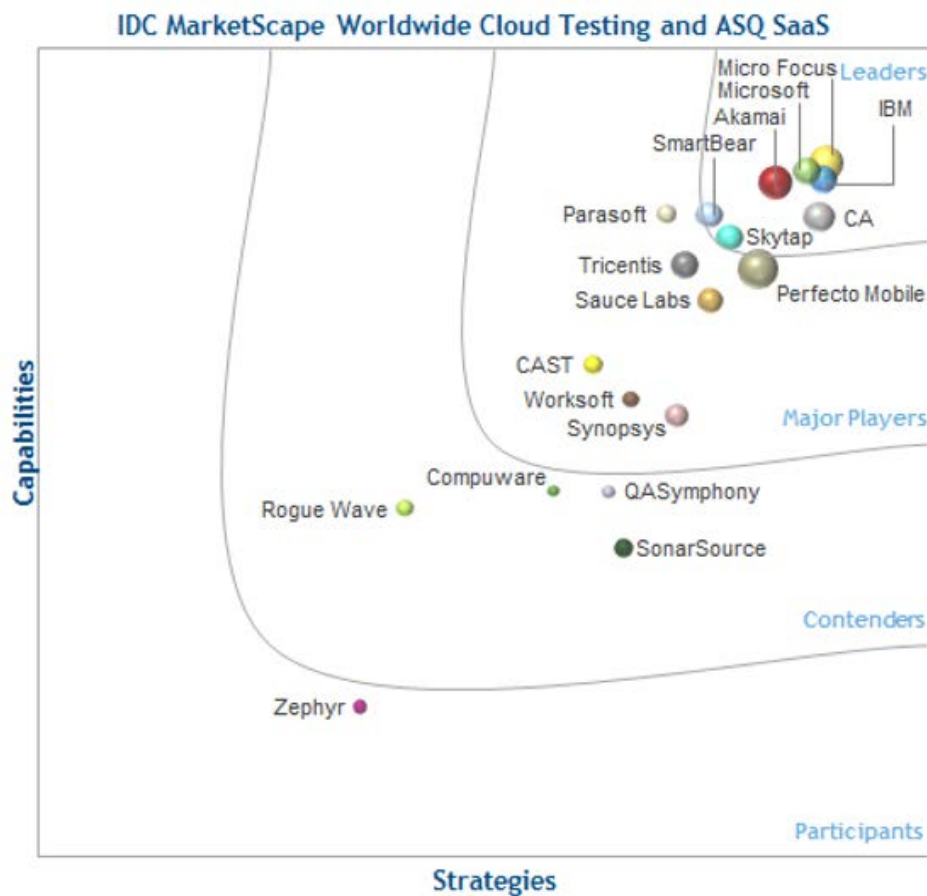
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THIS IDC MARKETSCAPE EXCERPT FEATURES IBM

IDC MARKETSCAPE FIGURE

FIGURE 1

IDC MarketScape Worldwide Cloud Testing and ASQ SaaS Vendor Assessment



Source: IDC, 2017

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 Cloud Testing and ASQ SaaS 2017-2018 Vendor Assessment – Enabling Quality in and on the Cloud (Doc #US41601017). 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.

IDC OPINION

Demand for solutions to test applications on the cloud and for the cloud is rising significantly as high-quality, well-performing software across platforms drives business innovation and competitive positioning. Companies investing in software in an economy that remains volatile with constrained resources and complex deployment challenges are benefitting from and committing to automated software quality (ASQ) software as a service (SaaS) and adaptive testing infrastructure support for and in the cloud. This dynamic market is continuing with strong demand and adoption, so this IDC MarketScape includes a separate, focused analysis to support users in their strategy and purchase decisions because of the importance of this key area for ASQ. (We see cloud testing as a "killer app" overall for the ALM arena – an obvious use case.) As organizations brand on mobile and other multimodal platforms and deploy for and in the cloud, IDC sees urgent need for approaches to software quality that extend to cloud testing and ASQ SaaS. User engagement is driving adoption and uptake in this area for automated software quality. Specifically, growth factors for cloud testing "in" the cloud and "of" cloud applications include the following:

- Cloud testing enables rapid access to both quality solutions and support infrastructure to sustain complex software sourcing and distributed development. SaaS and cloud testing require fewer resources and less capital expenditure compared with on-premises ASQ and enable faster adoption.
- Enterprises, small and medium-sized businesses (SMBs), and managed service providers leverage cloud testing to lower costs for testing where the investment demand for on-premises solutions is too exorbitant for these companies.
- Large service and solution providers see cloud testing as an opportunity to evolve and bundle new quality services together to target emerging markets for additional value-add and service offerings. This complements well the quality needs for mobile, ERP, security, and other areas (regulatory compliance, VoIP, etc.). Benefits of self-service infrastructure provisioning are key across areas (cost, adaptability, flexibility, and dynamism).
- Service virtualization as an enabler for continuous integration for DevOps and virtual test environments is another adoption driver in this arena and criteria for evaluation.
- We also see increasing demand for testing the quality of applications deployed to the cloud (as a delivery model) and analysis of the readiness of existing "noncloud" applications for migration to the cloud. Tools that enable analysis of the quality of cloud applications are also assessed in this IDC MarketScape.

IDC MARKETSCOPE VENDOR INCLUSION CRITERIA

IDC evaluated 19 vendors for inclusion in this IDC MarketScape for cloud testing and ASQ SaaS. Vendors needed to have sufficient cloud testing automated software quality capabilities available in key areas of concern for IDC clients (e.g., test infrastructure provisioning and configuration management, deep analytics for analysis of performance optimization, service virtualization, architectural and other analysis to enable visibility into the health of applications deployed in the cloud, readiness for software targeting the cloud, and/or delivery of their ASQ software solution in the cloud with partner integration for other capabilities). Vendors needed to appear in IDC discussions with end-user clients as part of RFP and other inquiry for ASQ during 2017 into 2018 and needed minimum overall revenue of \$20 million for CY16, with at least \$5 million of that revenue as 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 are Akamai (which acquired SOASTA in 2Q17), CA Technologies (including its acquisitions of Veracode in 2Q17 and BlazeMeter in 4Q17 and earlier ASQ acquisitions and existing products), CAST, Compuware, Micro Focus (formerly HPE until the merger completed in September 2017), IBM, Microsoft, Parasoft, Perfecto Mobile, QASymphony, Rogue Wave, Sauce Labs, Skytap, SmartBear, SonarSource, Synopsys, Tricentis, Worksoft, and Zephyr.

IDC structured its approach to inclusion for vendors in the cloud testing category based on the strength of their products' ASQ cloud capabilities and strategy, revenue share in part (as indicators of adoption and staying power), and differentiated position and capabilities in emerging markets of concern. The focus for IDC for leaders has been on cloud testing breadth and depth, scalability, coordination with end-to-end life-cycle management, service virtualization, and strong data analytics as well as process support for systemic adoption and engagement, which have been key drivers for leadership.

ADVICE FOR TECHNOLOGY BUYERS

Cloud testing and ASQ SaaS facilitate the release and provisioning process through improved infrastructure availability and management for testing pre- and post-production. Service virtualization plays a role for both test labs and release management/provisioning. For this reason, IDC includes assessment of coordination for cloud testing solutions pre- and post-deployment as a criterion.

In addition, we increasingly see broader use of ASQ in coordination with application life-cycle management DevOps solutions. These products – which include requirements, testing, software change management, version control, release management and deployment, and in some instances, project portfolio and agile process management – can help provide granular metrics for the assessment of IT software quality project delivery and/or delays. These quantitative metrics can provide guidance both for cloud testing and ASQ SaaS success and failure and for the effectiveness of internal and external resources being used to execute on software quality initiatives. Those metrics then help enable qualitative choices about risk, compliance, and where additional resources may be needed to troubleshoot quality problem for challenging delayed software programs. Test data management plays a role here as well. (Typically, the projects with the greatest business value and dynamism involve greater risk for which quality needs to be monitored effectively.) These metrics can also help inform choices about internal resources and service providers where outsourcing is a key element for software portfolio execution.

These market factors and end-user demands informed IDC's choices about focus and weighting for this IDC MarketScape for cloud testing and ASQ SaaS assessment framework.

This study evaluates the principal vendors participating in cloud testing areas and applies that lens to the overall IDC MarketScape for ASQ series. At a time of economic disruption, businesses require the capability to be able to effectively test and optimize the software that drives business innovation, and augmenting test infrastructure with testing in cloud is an obvious benefit at a time of constrained resources with ongoing economic volatility. Companies have little leeway for poor software quality as they push forward competitively. Resources for both development and quality assurance and quality control remain highly constrained. Companies must make appropriate test automation strategy decisions for their businesses in response to both dramatically increased technology complexity and severe competitive and innovation pressures. IDC's cloud testing evaluation is based on a comprehensive framework and a set of parameters to assess vendors relative to one another and to those factors expected to be most conducive to user demand and to market and competitive success for the short term and the long term.

Overall, cloud testing excellence for this research must encompass strong capabilities for testing in the cloud and cloud test infrastructure management and dynamic provisioning, SaaS options for ASQ, and testing of target cloud applications. With a rise in complex sourcing, we increasingly see the need for metrics and service-level agreements (SLAs) that incorporate visibility into application performance in the cloud. This can facilitate evaluation of internal and external resources with testing metrics while improving assessment of consistent quality execution for successful software and effective software performance optimization with the use of adaptive cloud infrastructure.

The focus for this IDC MarketScape for cloud testing and ASQ SaaS (and for the companion IDC MarketScape for ASQ documents) was chosen based on IDC's assessment of evolving market demand and user input. Additional ASQ perspectives may be needed and are available on a custom basis. Context and analysis for these ASQ views are key; however, a single view (or narrow combination of views) by itself is inadequate for ASQ purchase decisions. These decisions must be made in the context of user organizational and process maturity, most pressing immediate and long-term demand and gap assessment, and dialogue with solution providers, analysts, and user references (and communities) with comparable needs.

Note: Those vendors rated most highly in this analysis have focused strategically on cloud testing both in the cloud and of cloud applications with examples of multithousand, cross-geographic, and multimodal quality cloud deployments. All vendors evaluated have evolved their offerings sufficiently to participate in this assessment, but we observe a range of execution across all three areas, from Leaders to Contenders, with one Participant. This is due, in part, to the more limited evolution of the market at this point. We expect ongoing evolution across this product category as well as acquisitions moving into the 2H18-2020 period.

Leaders

The vendors in a leadership position for this cloud testing and ASQ SaaS research enable cloud infrastructure provisioning for testing and test artifacts, service virtualization (in some cases via partnership), and analysis of applications deployed in the cloud. The Leaders of this IDC MarketScape for cloud testing and ASQ SaaS are Micro Focus, IBM, Microsoft, Akamai, CA Technologies, Skytap, and SmatBear. Key capabilities for positioning as a Leader in this study include support for test provisioning in the cloud and decommissioning, management of cloud infrastructure, service virtualization, and assessment of quality for cloud applications. Even as we see organizations moving

to "modern" development environments with adaptive approaches, the capabilities of a combined suite as part of an end-to-end DevOps life-cycle approach is appropriate for some enterprises and plays a factor, along with strong cloud platform adoption by providers included in this category.

Major Players

The vendors in the Major Player segment fall into categories of innovative providers with capabilities relevant for cloud testing both in the cloud and of cloud applications. For instance, CAST Software's Highlight enables a health assessment for application portfolio analysis of cloud readiness for existing applications, and Tricentis enables platform access in the cloud, API testing, service virtualization, exploratory testing and analytics. Perfecto Mobile enables broad and deep multimodal platform support in the cloud (with Wind Tunnel context for impact factors), and Sauce Labs offers a cloud testing platform (though not service virtualization or SOA testing), and both companies were Leaders in the IDC MarketScape for mobile testing digital quality. Worksoft has rearchitected its platform for the cloud and, with Execution Manager, enables scheduling across virtual machines in the cloud (or on-premises) and SOA testing (Analyze was already available in the cloud). Parasoft enables long-time SOA testing and service virtualization capabilities, and Synopsys offers a cloud portal service and emerging coordination across its code analytics products in the cloud. The vendors in the Major Players category are Perfecto Mobile, Parasoft, Sauce Labs, Tricentis, Worksoft, CAST, and Synopsys.

Contenders

The vendors in the Contender segment include providers that have strong capabilities in a related area and offer product capability in the cloud. For instance, Compuware launched Topaz product support on AWS cloud in 4Q17 to enable its mainframe development, quality, and debugging capabilities in the cloud. The vendors in the Contenders category are Compuware, QASymphony, SonarSource, and Rogue Wave.

Participants

Participant capabilities for cloud testing require less than those of Contenders. In this case, Zephyr is evolving its cloud strategy currently with initial capabilities and is a Participant for this study.

VENDOR SUMMARY PROFILE

This section briefly 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 the vendor's strengths and challenges.

IBM

IBM is a Leader in this IDC MarketScape for cloud testing and ASQ SaaS.

IBM products include the following: IBM Rational Quality Manager, IBM Rational Test Workbench, IBM Rational Integration Tester, IBM Rational Test Control Panel, IBM Rational Test Virtualization Server, IBM Rational Performance Test Server, IBM Infosphere Optim Test Data Management, IBM Security AppScan Standard, IBM Rational Test RealTime, IBM MobileFirst Quality Assurance, IBM Service Tester for SOA Quality, IBM Rational Test Workbench Mobile Test Edition, IBM Rational Software Architect Designer, IBM Z Systems Development and Test Environment, IBM Security AppScan Source and Enterprise, IBM Tealeaf CX and Tealeaf CX Mobile, IBM Predictive Customer Intelligence, IBM Rational Team Concert, IBM Rational DOORS Next Generation, IBM Rational Application

Developer for Websphere, IBM UrbanCode Deploy and Release, IBM Application Performance Management, IBM Tivoli Composite Application Manager, IBM Control Desk, IBM Content Recommendations, DevOps services on Bluemix, Bluemix Continuous Delivery, Cloud Garage Method, IBM Rational Collaborative Lifecycle Management (CLM), and IBM Watson Analytics.

IBM was founded in 1911 in New York City and has evolved with regard to the automated software quality-specific IDC research in recent years with a focus on end-to-end application life-cycle management. IBM is differentiated overall by its comprehensive ALM portfolio and ASQ solutions, which reflect significant breadth and depth across a range of areas. (This is exemplified in the long list of products evaluated as part of this research.) The company estimates over 10,000 distinct accounts using its primary ASQ products (Rational Test Workbench, Rational Test Virtualization Server, and Rational Performance Test Server) and tens of thousands of users for those products (significantly more for specialized ASQ tools such as Rational Functional Tester, Rational Performance Tester, Rational Integration Tester, and Rational Test RealTime). From functional testing and requirements through to performance, load, and mobile, as well as leveraging related life-cycle management capabilities (such as software change and release management and ongoing integration of its ALM portfolio with RTC and processes), IBM is positioned for enterprise ASQ, which typifies adoption for IBM. IBM spent effort and resources evolving and integrating much earlier acquisitions of UrbanCode (in 2Q13) and Green Hat (in 1Q12) as the basis for the Rational Test Virtualization Server and Rational Integration Tester and focus on service virtualization with resulting combined products extending IBM's reach and paving the way for additional testing services and DevOps options (including Bluemix DevOps and Bluemix Garage). Announcements include the evolution of IBM's ASQ and ALM to target embedded software quality including targeted integration with DOORS Next Generation focusing on systems engineering and earlier partnerships with National Instruments and others.

IBM has a long-term partnership with HCL Technologies, which develop and maintain IBM's ASQ tools. This partnership was announced by both companies in 4Q16 and has been agreed upon for a duration of 15 years. This partnership was created to enable additional resources to focus on the ASQ product sets. (IBM Rational Quality Manager is still developed by IBM.) Declining revenue exemplified a lack of uptake for IBM's ASQ products, in part because of the lack of a timely cadence for updates and the lack of effective sales outreach. Enterprise IBM ASQ customers with whom IDC spoke said they are generally well supported by HCL employees (many of whom were the same IBM team members with whom they had worked previously). We have seen quarterly updates this year so far as examples of faster delivery for IBM ASQ products being developed by HCL in March 2017 and June 2017 (e.g., API testing and service virtualization, functional testing, and performance testing). IBM and HCL continue with weekly meetings to coordinate product updates and road maps. This close coordination for product planning and execution will be essential to an arrangement that has IBM leading the thought leadership and strategy as well as performing sales and marketing for these products and has HCL doing ongoing development and customer support. We expect to see a positive impact from this relationship in the 2017-2018 time frame, assuming strong execution and ongoing collaboration.

ASQ-related products from IBM include areas such as software development (with WebSphere coordination for traditional development and emerging mobile support), DevOps (with UrbanCode Release and UrbanCode Deploy, DevOps services on Bluemix, and Bluemix Continuous Delivery), and security and analysis (with IBM Security AppScan Standard). IBM's push into the embedded software life-cycle market provides additional opportunities for ASQ in key emerging markets (although embedded software testing is not a core focus for this IDC enterprise ASQ analysis). IBM software linkages with InfoSphere Optim test and data life-cycle governance also present additional opportunities for enhancing software quality processes with more cost-efficient and streamlined

dev/test cycles. Although not yet well leveraged across the ASQ portfolio, opportunities exist for cross-brand announcements with cognitive and predictive ALM with the Watson team, leveraging process patterns and emerging technology areas with Internet of Things (IoT) ALM and blockchain. IBM's global presence, internal and external resources, and consulting support position IBM for its ASQ and overall end-to-end ALM strategy.

Strengths

Probably one of IBM's greatest strengths is the sheer breadth, scale, depth, range, and longevity of the company's ASQ and ALM product portfolios. IBM's intent is to enable organizations to build out on existing investments across a range of platforms, from heritage applications as part of system-of-record legacy platforms to "modern" development on mobile and other platforms with varying form factors as part of IoT. IBM's development platform and engagement with the end-to-end DevOps life cycle encompassing service virtualization, continuous release, and continuous deploy automation position ASQ as part of that broader context – a focus for excellence for the IDC MarketScape for enterprise ASQ. For mobile quality, IBM has products ranging from MobileFirst Quality Edition to Test Workbench Mobile Test Edition to Tealeaf Mobile. For code analytics and security, IBM has products ranging from Software Architect Designer to Security AppScan Source and Enterprise. IBM has interwoven agile capabilities as part of its dev and ALM products with configuration management for life-cycle artifacts in CLM including RQM, a key aspect for successful DevOps. IBM has a large customer base and is committed to supporting industry and open technologies. ASQ is a key part of IBM's delivery portfolio. With IP in cognitive with Watson as part of the broader IBM organization, IBM has an opportunity to leverage machine learning as part of "smarter" or "intelligent" quality approaches to software creation and testing. Currently, IBM offers IBM Collaborative Lifecycle Management (CLM) integration with IBM Watson Analytics via Jazz Reporting Services (JRS) for cognitive insight into CLM data.

Challenges

The sheer breadth of IBM's ALM and ASQ portfolio is challenging to comprehend, manage, articulate, and sell. In part, IBM's shifting of development for many ASQ products to HCL exemplifies IBM's own need to focus efforts on other parts of its product line (DevOps, mobile, embedded, IoT, security, etc.). So while the significant ASQ and ALM portfolio enabled by IBM is differentiating, it can also be burdensome. High double-digit revenue losses for IBM for its ASQ product portfolio for the past two years and also in the SCCPM product arena showed execution challenges. IBM's relationship with HCL also created initial confusion among some about IBM's commitment to its ASQ product line. However, customers with whom IDC spoke have felt supported during the transition. It seems that IBM owns the IP that it transferred to HCL, while HCL owns augmentations to the portfolio, but the overall strategy, sales, and marketing continue to be owned and managed by IBM. Products not being developed by HCL that are being evaluated as part of this IDC research are closely linked in many instances to the ASQ portfolio and its execution, which requires ongoing coordination and leadership by IBM. There are clear benefits in dedicated resources for development and targeted execution planned by the combined companies.

Other challenges include a product set that tends to be more expensive than midrange competitors as well as more difficult to use and more complex to implement and support. That again underscores the importance of IBM for combined platform-as-a-service options for its product portfolio (some of which is evident in DevOps services on Bluemix and Bluemix Continuous Delivery with support for the Cloud Garage Method to help jump-start and enable successful adoption). Opportunities for IBM include evolving its cloud and overall platform-as-a-service strategies across its ASQ portfolio, along with clearer leverage of synergies between its ASQ strategy, security, and other products.

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.

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

The automated software quality (ASQ) SaaS and cloud testing market is a competitive market representing software as a service covering the automated software quality functional market and also revenue from the worldwide security and vulnerability management functional market including SaaS products sold providing code analytics as part of software quality, analysis, and measurement functionality.

Automated software quality tools support software unit testing, system testing, or both; they also support software quality assurance. Functions such as test specification, generation, execution, and results analysis, as well as test and QA management, are included in this category. ASQ SaaS and testing in the cloud (private, public, and hybrid) – and virtual test lab management as well as software quality analysis and measurement – are included in this category. Emerging platform support for mobile, video, crowdsourcing, end-user experience, embedded software quality, and other areas will be considered. 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.

To qualify as a software-as-a-service solution, the offering is provided by a third-party, offsite provider and is not deployed internally by the end user. It is also required to support the majority of the following attributes:

- Is a shared one-to-many service built for a public market, not for a single customer (We also see the emergence of private cloud and hybrid cloud testing solutions.)
- Is provided as a "turnkey" solution that integrates required resources
- Provides dynamic, fine-grained service "scaling" associated with the needs of the business, the numbers of users, and so forth
- Supports user-oriented pricing, utilization, and cost tracking
- Enables self-service provisioning with cloud testing (although some onboarding may be necessary with staff support for more complex customizations)

SaaS and emerging cloud testing offerings often bundle hardware, services, and software licenses into an annual (or sometimes monthly) subscription fee, though in some cases, the user may license the software separately from the supporting infrastructure and services. SaaS can act as an on-ramp to cloud testing. Testing is particularly well suited to a cloud delivery model, given the need to mirror production systems with appropriate infrastructure to support consistent, well-managed, quality approaches. IDC's estimates for this market include all revenue associated with the delivery of services that support the functionality described previously. While the majority of revenue presented here is in SaaS, we expect increasing revenue for cloud testing offerings and user uptake to continue through 2016 and beyond.

LEARN MORE

Related Research

- *IDC MarketScape: Worldwide Mobile Testing and Digital Quality 2017-2018 Vendor Assessment – Enabling Digital Transformation via Quality Solution* (IDC #US40344615, February 2018)
- *IDC MarketScape: Worldwide Software Quality Analysis and Measurement 2017-2018 Vendor Assessment – Uniting Quality with Security for DevOps* (IDC #US41601217, December 2017)
- *IDC MarketScape: Worldwide Enterprise Automated Software Quality 2017-2018 Vendor Assessment – Driving Business Optimization via DevOps with Continuous Test and Integration* (IDC #US41601117, December 2017)
- *Worldwide Automated Software Quality Forecast, 2017-2021: Digital Transformation, DevOps, Evolving IoT and Cognitive Enable Long-Term Growth* (IDC #US42777517, June 2017)
- *Worldwide Automated Software Quality Market Shares, 2016: Setting Path to Quality for Digital Transformation from Legacy to Web to Mobile to IoT Leveraging Cloud* (IDC #US42776617, June 2017)

Synopsis

This IDC study uses the IDC MarketScape model to provide an assessment for cloud testing and ASQ SaaS, evaluating automated tools capabilities for enabling virtual testing infrastructure in the cloud, service virtualization, and testing of cloud applications as one of four key assessments of the IDC MarketScape for ASQ to provide a comprehensive view across key areas of the market – enterprise ASQ/DevOps, quality/security with software quality analysis and measurement, and mobile testing and

digital quality. Organizations seeking process, services, and product automation capabilities for ASQ come to their decision making with varying levels of maturity, differing pain points, and challenges. This is even more the case in a volatile global economy 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 cloud testing ASQ criteria and our four-document report series is to demonstrate weighting approaches for the areas of greatest importance that come up for users making high-end ASQ selections currently with transformative demands for mobile, cloud, IoT, 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 no context for user-specific challenges or variegated maturity levels). We believe that in-context weighting and analysis is optimal to enable pragmatic insight for users making decisions in a dynamic, increasingly chaotic, complex global competitive environment. Additional weighting and visibility are available individually – yet publishing multiple IDC MarketScapes 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 multimodal development and complex sourcing for software projects. This continues the existing trend for combining internal resources with contractors, onshore/offshore providers, and use of open source. With Continuous Integration and agile DevOps approaches along with the need for DevSecOps, the demand for effective quality has increased geometrically," said Melinda Ballou, program director for IDC's Application Life-Cycle Management and Executive Strategies service. "Creating strategies that enable cloud testing with virtual infrastructure and service virtualization as well as testing of cloud applications for visibility into their health enable broader portfolio coordination with ALM and capabilities for emerging platforms with mobile, cloud, IoT, and other areas. It is in part due to this increase in vulnerabilities and complexity for software development and deployment projects that IDC has chosen to prioritize combined capabilities for ASQ with additional life-cycle areas. Cloud testing solutions in this context can provide a basis for collaboration to enable continuous quality as part of end-to-end DevOps. While this IDC MarketScape focuses on cloud testing and ASQ SaaS, IDC has chosen the context of three additional sample weighting strategies that have currency in 2018 and are frequently requested by users speaking with us – mobile testing and digital quality, software quality analysis and measurement, and enterprise ASQ. Global organizations seeking to coordinate continuous DevOps and other areas demand high levels of functionality, scalability, and maturity overall to execute well."

About IDC

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