Magic Quadrant for Integrated Software Quality Suites

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VIEW SUMMARY

Testing is one of the key processes in the software development life cycle. The market has been steadily maturing to deliver improved user success, but technology changes like agile practices, mobile computing and cloud platforms can complicate vendor evaluation for testers and test managers.

Market Definition/Description

The integrated software quality (integrated quality assurance [IQA]) tool suite market is a subsegment of the overall software development life cycle market. It is a composite market composed of an integrated suite of related toolsets, rather than a single technology. Within this suite, three traditional areas stand out as the principal focus:

- **Test management** — tools to manage and plan testing activities, defects and report results
- **Automated stress and load testing** — tools that simulate the load of multiple users against a server infrastructure to understand and tune performance
- **Automated functional and regression testing** — tests that mimic a single user to find defects in the application

These three areas are the centralized focus of the market, and remain the most critical features when Gartner evaluates vendor offerings. We expect market leaders to support all three functional areas. Most leading vendors in this market analysis also provide tools for broader quality tasks, such as code quality (static analysis), code review and unit test support.

The breadth of types of technology and application layers that can be tested varies, with vendors in the Leaders quadrant generally supporting a broad set of technologies. Leading vendors provide integration/connectivity/synchronization between the suite components and other tools within the software development life cycle (e.g., requirements management, continuous integration, etc.).

Vendors that don't have this breadth will generally act as those in the Visionaries quadrant or end up more to the left of complete solutions (as specialized market players). In many cases, due to the large shifts in technology and development styles, we expect that many enterprises will have a core provider that is enhanced with other best-of-breed components. Our focus here is on vendors with the intent and ability to provide offerings that serve as a core element of an enterprise quality assurance (QA) stack.

At its core, the IQA testing market is quite mature, with a strong stratification of vendors by annual revenue. In this Magic Quadrant, we are focused on the more mature elements of the market, as many of the more visionary elements supporting the Nexus of Forces (social, mobile, information and cloud) are evolving rapidly and are fragmented, thus subject to tactical adoption. Therefore, the market weightings emphasize execution-oriented criteria. Even today, we are seeing vendors that, in the past, may have been Visionaries now shifting into other quadrants, based on their ability to execute on sales and customer growth, partnerships, acquisitions, and filling out their offerings. As the market shifts toward mobile and service architectures, it is possible that market Leaders could be disrupted; however, this will again be dictated by the execution of partnerships and acquisitions, and the ability to enable client success, which will require more than tools. As a result, we expect to make changes in the metrics and weightings in next year's Magic Quadrant that may more significantly shift positions in future analyses.

Magic Quadrant

Figure 1. Magic Quadrant for Integrated Software Quality Suites

NOTE 1

MOBILE APPLICATION TESTING

The mobile application testing market is a hotbed of activity, with a growing number of providers and varying approaches, as well as growing capabilities. This can include broadening the platforms supported and device lab solutions. Techniques for the tools to access and drive the application are varied, exhibiting different strengths and weaknesses in platform coverage, and time-to-market for new functionality. Depending on the types of applications you are creating — mobile browser, native, hybrid and the level of interactivity (use of gesture sets, access to platform features), access path needs may vary. Most vendors in this research rely on partnerships with third parties to provide mobile testing support, but a growing number have engineered their own solutions. The market has developed slower than expected, as much of the mobile development has been outsourced business-to-consumer development (e.g., Gorilla Logic) and business-to-enterprise, and B2B development (and thus testing) has lagged. However, mobile is a critical element of future computing strategies. Testing will not find all the defects in mobile apps. We expect this will lead to a combination of ad hoc testing approaches, using facilities such as Applause’s Apphance, and other crowd or outsourced facilities, and a greater need for testing beyond traditional functional tests. In particular, usability, security and localization tests will be a key part of a robust mobile app strategy. This will lead to a very dynamic market, with the continued entry of new tools and services, partnerships and acquisitions, and the demand on organizations to increase funding for training. Because of the inherently dynamic nature of the market, expect tool acquisitions to be tactical at this point.

NOTE 2

COTS TESTING

We have not included COTS-testing-focused solutions in this research. Some of the included vendors do have support for various COTS packages (typically SAP and Oracle), but focused solutions often provide additional acceleration, including management of test data, connection to change management to automate selection of tests that need to be run and change impact analysis. Focused vendors are also beginning to provide support for SaaS solutions, and, as a whole, their focus on dealing with COTS implementations drives faster innovation in the specific market and a focus on the type of users that is different from custom development. In addition, a number of outsourcing vendors have developed specific practices for various COTS solutions.

Package-specific vendors include:
- Panaya
- SAP
- Worksoft

General vendors with COTS support include:
- Borland
- HP
- Oracle
- Original Software
- Tricentis

EVALUATION CRITERIA DEFINITIONS
Vendor Strengths and Cautions

**Automation Anywhere**

Automation Anywhere offers a strong solution for test automation and should be considered for teams with nontechnical testers, good cross-platform support (including mobile), and coverage of functional and performance tests. Building on its success in desktop automation, the product has strong recognition technology and ease of use. The vendor has a hands-on approach to enabling successful product trials, and makes use of a hybrid (online and field) sales model.

**Strengths**

- Users report that customer support is strong — an area in which Gartner believes Automation Anywhere stands out among its competitors.
- Building from its experience in desktop automation, Automation Anywhere delivers ease of use with functional, load/stress and mobile application testing.
- Coverage of a broad set of client technologies is provided, including cross-browser, mobile and desktop applications.
- The product’s strong orientation toward ease of use as a priority is further enhanced by support for both object and image-based testing.

**Cautions**

- Gartner defines three critical features for this market (see the Market Definition/Description section). Among these, Automation Anywhere is missing test management functionality.
- The vendor does not offer support for cloud-driven load testing or device clouds for mobile testing.
- There is a lack of integrations to other products, particularly application development life cycle management (ADLM) or other test management solutions.

**Borland**

Borland has full support for the development life cycle, including tools for assessing code quality and integration between requirements and test management. The products should be considered by those requiring broad technology coverage and desiring consistent incremental innovation.

**Strengths**

- Borland provides very strong test management and support for risk-based test planning and continuous stream of innovation, including mobile and agile.
- The vendor provides strong integration within its testing suite to external integrated development environments (IDEs), and its own life cycle management tools for traceability and automation.
- Borland’s Silk Portfolio offers support for cross-browser and cross-device configuration testing via incremental innovation.
Silk Mobile and Silk Central Connect.
Support for mobile load and performance testing is built into Silk Performer.

**Cautions**

Borland lacks support for testing service-oriented architecture (SOA) and service virtualization.

The vendor continues to invest in the former Compuware tools, but users should consider eventually using migration tools to switch to Silk.

Customers report a weak standard reporting feature and weak integration with other vendors’ ADLM platforms.

While Borland has made improvements to cross-product integration, there is still needed improvement between test management, test automation and performance testing.

**CA Technologies**

CA’s testing product strength is API testing and service virtualization, which helps to shift testing closer to development (i.e., a “shift left” approach). The vendor is expanding its focus on the testing space with go-to-market investments, as well adding a number of OEM relationships and expanding its graphical user interface (GUI) testing capabilities.

**Strengths**

CA offers market-leading service virtualization solutions with broad protocol and technology support.

The vendor has taken a strong position in tools to enable DevOps practices, including driving continuous testing. Support is provided for automated API/performance testing, as well as for complex or composite architectures and mainframe testing, covering CICS, COBOL, middleware/messaging platforms and other core system technologies.

CA offers new support for mobile testing, cloud-based performance testing and Selenium-based UI test automation.

**Cautions**

Much of CA’s focus is on acceleration of development, which helps move quality management and testing closer to development; however, this focus does not match up with other traditional software testing solutions, making direct comparisons more difficult.

CA relies on several OEM partners to round out numerous elements of its suite’s functionality (e.g., Perfecto Mobile, Soasta and Grid-Tools).

Customers note that integration within the suite is weak, but has improved in recent releases.

**HP**

Consider HP if you seek a comprehensive portfolio of integrated products that have broad technology and community support, covering packaged, client/server, mobile and Web applications for functional, performance and security testing (both manual and automated), test management and life cycle virtualization, including service and network virtualization.

**Strengths**

HP is the market share leader in performance testing and test management, making investments in expanding its capabilities to incorporate cloud and mobile, and connecting DevOps features, including integration into continuous integration tools and life cycle virtualization solutions.

HP has a broad network of partners, both for service and technology providers, including even its competitors.

Customer references cite flexibility, extensibility and maturity of the tool suite, as well as alignment to core test delivery.

**Cautions**

HP lacks support for developer (unit) testing, although it offers API testing and integration with continuous integration tools; in general, it has become more of a fast follower than an innovator, leveraging partners to fill gaps until the market settles.

The vendor carries a price premium, with an improving, but complex, pricing model. References consistently mention the high costs of licensing, support and maintenance, although this is being mitigated with the recent introductions of lower-cost license and SaaS offerings.

Gartner has seen a consistent pattern among competitors gaining market share directly from former HP customers, indicating a weakening trend in its traditionally dominant market leadership.

**IBM**

IBM has built a broad portfolio of technology products and services over many years. It is well-positioned for large-scale enterprise testing organizations, combining the tool portfolio and IBM Global Business Services to build effective practices and a strong partner network. The products have made strong strides during the past few years in becoming more consistent and improving ease of use.

**Strengths**

IBM has one of the broadest portfolios in the testing tool market, going beyond the core of test management and test automation to include static analysis, unit testing, service virtualization and test data management.

The vendor’s historical strength is not just its products, but also the combination of those products
with IBM Global Business Services and the expertise the vendor brings in metrics, testing centers of excellence and agile transformation.

IBM is also a market leader in ADLM tools, providing companies a consolidated set of tools across requirements, development, and quality management and execution. Users note that collaboration facilities across various participants in the software delivery process are very strong.

Cautions
While IBM has greatly improved the consistency and integration facilities of its tools, customers still note that ease of adoption, integration to third-party products and ease of upgrades are a challenge, and IBM should communicate its directions more clearly.

Because of the broad set of scenarios supported, some users note that the pace of innovation can be slower than desired and product support experiences can be mixed.

The ability to support multiple environments and reuse testing assets across different test types and landscapes has been noted by users as needing improvement.

Microsoft
Microsoft offers Visual Studio Team Foundation Server (TFS) and a solid focus on testing as a "team sport" involving product owners, developers and testers. Its tools will primarily appeal to enterprises utilizing Visual Studio for development with technically oriented test teams.

Strengths
Because of the core integration to development teams and TFS, Microsoft provides solid support for the integration of testing into the build process and for governing code quality processes.

Well-documented and well-supported tools and training are provided through products, services, the Microsoft Developer Network, and a third-party ecosystem of publishers and service producers.

Microsoft has been extending its development and testing stack with support for open source, enabling support for a wide variety of technologies running on its Azure cloud offering, and also supporting cross-browser testing.

Cautions
A strong focus on TFS and the Microsoft stack means that its testing suite is less valuable for outside the Microsoft sphere; moreover, there is little support for package application testing.

TFS offers limited support for mobile. Currently, it relies on integration with Perfecto Mobile to support native device testing via coded UI tests.

A developer-centric focus has resulted in the lack of a script-free approach to functional automation. This has the effect of relegating subject matter experts (SMEs) to manual and exploratory test roles. However, support for exploratory testing is exemplary.

Oracle
Oracle’s testing tools have experienced growing recognition among its large customer base, especially for users of its application and system management tools. However, execution into the market has lacked visibility outside of Oracle’s enterprise application and Fusion Middleware customers.

Strengths
Oracle’s strengths lie in database testing, including database virtualization, data masking, SQL performance and database replay.

The vendor offers frameworks to drive acceleration of testing for its packaged applications, as well as for Oracle development frameworks.

Broad testing coverage is provided, from developer-level tools in Java to traditional functional and load/performance testing. Functional test scripts can be consumed by load and performance test drivers.

Oracle has a strong partner network and global presence.

Cautions
The vendor lacks a cohesive application life cycle management (ALM) platform or integration to other life cycle products, and internal integration and coordination is often lacking (e.g., synchronization to Java technology releases).

Recognition outside of the Oracle system management market has been limited.

Service virtualization is packaged as part of WebLogic, and Oracle’s suite lacks support for mobile applications.

Customers note that the included reporting features are suited for simple reports only. More complex reporting is supported in the Oracle Business Intelligence (BI) Publisher tool or in Oracle Business Intelligence Enterprise Edition (OBIEE).

Original Software
Original Software provides a strong solution for functional test automation and a process that enables users to progress easily from manual to automated testing and tools that do not require scripting, thus reducing costs to create and maintain automation. The tools are well-suited to business-focused test teams.

Strengths
In addition to general QA scenarios, the vendor supports both SAP and Oracle E-Business Suite (EBS) testing (including predefined test packs), and is one of few vendors to support IBM iSeries. Customers consistently report that Original Software offers ease and high productivity via a code-free approach and process to migrate from manual to automated testing. The vendor offers test data management that extracts and masks data, as well as rollback database testing and support for API-level SOA testing. Original's test management capability has a unique workflow process, with the ability to view multiple projects and manage progress across the whole organization.

Cautions
Gartner defines three critical features for this market (see the Market Definition/Description section). Among these, Original Software is missing performance/load testing functionality. The vendor is strongest in North America and the U.K., with a more limited presence in the Asia/Pacific region. While it continues to strengthen its support on the agile front, it lacks service virtualization.

Parasoft
Parasoft has a strong message around development productivity that comes from a shift-left approach to driving quality through the entire development process. However, this approach tends to position it more as a complement to other QA vendors, rather than as a direct competitor. As such, its technologies are often good tuck-ins, primarily focused on the developer to round out an overall approach to software quality.

Strengths
Parasoft has a strong focus on overall quality and the early detection of defects to drive a software defect prevention approach; toward this end, it has a major focus on both continuous integration and agile application development (AD). Parasoft's testing suite can help bridge gaps between development, test and business, as well as ease regulatory and standards compliance. The vendor's SOA testing and service virtualization features have good support for protocols and a competitive pricing model. Strong dashboarding functionality enables everyone connected with a project to gauge progress and quality levels, and tools tie in to common continuous integration systems, creating a good fit for agile teams.

Cautions
Parasoft does not play in the traditional user-driven UI load/stress or automation markets. Tools are not oriented around basic acceptance tests or SME-level users. Its focus on defect prevention, rather than traditional testing areas, positions Parasoft as a complement to a larger test strategy, but generally not as the core anchor of a QA tool portfolio.

SmartBear
Consider SmartBear if you are looking for a broad set of tools that covers developer-oriented code quality, including code and document review, in addition to core testing. The tools are a good fit for technically adept organizations that want well-priced tools that weave naturally from development to operations. SmartBear is the driving force behind the broadly adopted open-source SoapUI, giving it a strong footing in the API testing market.

Strengths
SmartBear provides solid support for migrating assets from HP solutions into its products. It offers an attractive pricing model, with price points that address different markets. The vendor's API/SOA testing includes support for security and component-level load and stress testing. SmartBear has a full life cycle view of software quality, including application performance management, as well as third-party integration and a strong developer community program.

Cautions
SmartBear's SoapUI has a strong uptake, but it lacks support for service virtualization, although this support is in development now and core mocking services are provided. The vendor's open-source and “freemium” offers appeal mostly to developers and testers, but less so to enterprises. SmartBear has grown through acquisitions, leading to tools with different UI models and levels of integration.

Soasta
Soasta has consistently provided innovation for modern applications with cloud-delivered load testing, and extending to mobile application testing. Consider Soasta for testing modern browser applications, including mobile. These are not tools for traditional client/server and other legacy technologies, in much the same way that legacy-centered tools are not well-suited to a modern application stack and development approach.

Strengths
Soasta provides ease of automation with its codeless, full object-level testing without modification of the device, thus reducing maintenance and providing more accurate gesture capture and playback.

The vendor has been proven in extremely large-scale performance testing and has strong services to aid in the effective testing of high-capacity sites.

The combination of real-time analytics with the codeless automation environment and real-user monitoring (RUM) provides a good foundation for driving improved test effectiveness.

**Cautions**

Soasta is focused on specific market segments — mobile (for iOS and Android) and Web performance testing — and acts as a best of breed for specific functions, rather than a comprehensive quality suite.

The vendor is missing test management functionality, and users report that some overall administrative functions are weak; it relies on integration and partnerships for these.

Soasta does not expose APIs and lacks support for single sign-on (SSO)/LDAP.

**Telerik**

Telerik provides a set of testing tools that supports modern UI frameworks, agile testing techniques, and the testing of iOS, Android and Windows Phone 8 apps. It is well-suited to independent software vendor (ISV)- and product-development-focused teams.

**Strengths**

One of Telerik’s strengths and its key market differentiator lies in its ease of use and familiarity for Microsoft developers. Test Studio features integration to Visual Studio and use of C#, Visual Basic, .NET or JavaScript as the scripting language.

The vendor offers a low-cost product line with a subscription-based licensing model. There are frequent updates, adding new features.

Telerik’s mobile solution supports a broad set of platforms using object identification. Tests can be recorded either on the device or using an emulator.

The Telerik AppFeedback module offers the ability to gather and directly integrate customer feedback into the mobile development process.

**Cautions**

Although Telerik goes beyond its integration with the Microsoft technology stack for Web testing, the larger market often fails to see beyond this partnership, keeping the vendor off the shortlists of many potential non-Microsoft-centric customers.

The scope and target of the vendor’s products are such that it has limited partnerships; but Telerik has articulated a number of planned improvements in this area during the next 12 months.

**TestPlant**

TestPlant has grown rapidly over the past several years — from a foundation as the only vendor focused on the Apple platform to a full cross-platform test suite provider offering tools that are easy to use at nonpremium prices. The vendor has delivered a consistent stream of innovation and delivers a full complement of functionality, including industry-specific solutions.

**Strengths**

TestPlant offers a complete solution for functional, performance and test management, focused on ease of use.

Functional tests can be reused in the eggPlant Performance testing tool, which can also consume Selenium tests and includes broad protocol support.

TestPlant has shown a strong ability to execute the delivery of new products to market (most recently, manual testing and mobile device management) at a consistent pace, both through internal development and acquisitions.

The Test management solution provides lab management and integration to continuous integration.

**Cautions**

TestPlant’s technology relies on an image recognition paradigm, which is easy and enables rapid support for platforms; however, this technique has historically been seen as hard to maintain.

Users also note that functionality varies across OS types.

The vendor has limited partnerships and integrations to the rest of the AD life cycle, although it does provide an integration facility.

The scripting language, while straightforward, is unique to TestPlant.

**Tricentis**

Tricentis delivers innovative tools that have proven strong results in driving automation success. The vendor has grown its portfolio through internal innovation and partnerships, and has greatly improved its global field operations during the past year. It should be considered by enterprises that have struggled to make test automation work and those seeking to support agile continuous automation practices.

**Strengths**
Tricentis offers market-leading, model-based test planning and automation. The vendor provides market-leading test case design and planning, with strong analytics and risk coverage model. Tricentis offers integrated synthetic test data management, service testing and support for testing analytics applications. It is making strong efforts to support agile testing with integration to continuous integration, and support for behavior-driven development and API testing.

Cautions
The vendor does not have a General Services Administration (GSA) listing and has a slightly complex pricing model. Gartner defines three critical features for this market (see the Market Definition/Description section). Among these, Tricentis is missing direct support for load/stress testing; instead, it relies on a partnership with Neotys for this functionality. Users have requested better long-term road map visibility.

Vendors Added and Dropped
We review and adjust our inclusion criteria for Magic Quadrants and MarketScopes as markets change. As a result of these adjustments, the mix of vendors in any Magic Quadrant or MarketScope may change over time. A vendor’s appearance in a Magic Quadrant or MarketScope one year and not the next does not necessarily indicate that we have changed our opinion of that vendor. It may be a reflection of a change in the market and, therefore, changed evaluation criteria, or of a change of focus by that vendor.

Added
TestPlant

Dropped
SmarteSoft — This vendor continues to offer strong overall testing tools, but is focused primarily on markets other than enterprise IT (such as hospitals, blood banks and medical device manufacturers) and embedded technologies.

Worksoft — In this Magic Quadrant iteration, we have not included vendors that are primarily focused on commercial off-the-shelf (COTS) applications.

Inclusion and Exclusion Criteria
Vendors in this Magic Quadrant must provide the ability to create, manage and execute functional test automation. Their tools must support the creation of software tests on the Windows platform to test Web applications (additional platform test execution support is desirable, and the most complete vendors cover a wide set of technologies). The vendors in this market must have a basic global presence, which means that they are actively selling their products in multiple geographies, and have at least $10 million in annual revenue. (Note: This market includes a set of mainstream or traditional players that cover the testing of desktop and Web applications, plus a set of vendors from emerging or niche areas, such as SOA/external service bus, cloud and code-free solutions.) We did not include any of the mobile-only testing providers in this research, and have also not included COTS-specific testing tools (see Note 2). However, some of the included vendors may offer support, either directly or via partnerships, for both of these markets.

This Magic Quadrant looks at the entire market (traditional and new niches) as a complete market; however, that is not to say that the vendors in the Leaders quadrant are the only solutions that you should explore, or that looking at the market through more specific lenses would not change the shape of the market. There are strong stand-alone tools in each of the core functions: test management, functional automation and load/stress testing (see market overview section). It is important to keep in mind that a Magic Quadrant also emphasizes criteria that help assess where companies are with respect to being able to support an enterprise deployment to a global enterprise.

Evaluation Criteria
Ability to Execute
Because of the general maturity of the market, the Ability to Execute in a consistent fashion is critical and has been the defining attribute of the Leaders. This will continue, with those that gain in the market providing a clean combination of technology with very clear market positioning. It is not enough just to have “better technology” than the incumbents. Better technology is still important, but generally opens short-term windows until the incumbents acquire it or catch up. However, mobile and cloud are creating a great opportunity for market disruption.

Another challenge will be the Ability to Execute in a market that is increasingly aligned to agile practices. It will be very difficult for vendors to execute well with solutions that satisfy any use, which opens up the opportunity for focused solutions to move into leadership positions. It should be noted that this includes the ability to help organizations navigate new technologies and architectures, as well as understanding best practices.

A number of factors, including regulatory compliance and distributed and agile teams, are driving the need for strong partnerships across the life cycle and to service providers. Market pressure to reduce costs will continue to create openings for new tools and open-source solutions, and will force vendors to
deliver clear ROI; but, this will result mainly in market expansion, rather than replacement. At the enterprise level, company stability is also critical.

**Table 1. Ability to Execute Evaluation**

<table>
<thead>
<tr>
<th>Evaluation Criteria</th>
<th>Weighting</th>
</tr>
</thead>
<tbody>
<tr>
<td>Product or Service</td>
<td>High</td>
</tr>
<tr>
<td>Overall Viability</td>
<td>Medium</td>
</tr>
<tr>
<td>Sales Execution/Pricing</td>
<td>Medium</td>
</tr>
<tr>
<td>Market Responsiveness/Record</td>
<td>Medium</td>
</tr>
<tr>
<td>Marketing Execution</td>
<td>Medium</td>
</tr>
<tr>
<td>Customer Experience</td>
<td>High</td>
</tr>
<tr>
<td>Operations</td>
<td>Medium</td>
</tr>
</tbody>
</table>

Source: Gartner (August 2014)

**Completeness of Vision**

Because we are seeing a maturing in the traditional testing market and the first wave of cloud enablement has occurred, we weight heavily on completeness of overall offerings. This includes not only completeness of the technical product, but also the strength of ability to reach the market via a compelling message and to deliver a solid solution globally. An increasing number of teams are globally distributed, and the majority of organizations make use of a mixture of direct and indirect employees. This represents a shift in weighting from prior years.

Direct marketing capability is becoming less important than community feedback and competitive pricing. The ability for a vendor to build community, show results and enable customers to drive positive change is critical. Vendors have one of three options: create strong innovation, target a specific market segment or build a comprehensive portfolio. The key messages now are around productivity and the ability to aid in technology and process transformation.

Strong innovation is the most difficult position to hold, because the market has a general distrust of marketing claims and there is a strong need to be able to prove results. In addition, what was strong innovation a couple of years ago is often becoming more commonplace. However, while the basic concepts of innovators are copied, there are still generational gaps, and, many times, a greater challenge in meeting the pace of innovation or different business models. However, innovators must continue to find new areas of innovation or become relegated to niche roles over time. In this Magic Quadrant, we have chosen to rate innovation areas lower, and for innovation, we looked specifically at three areas: mobile, cloud and agile/DevOps. In general, most vendors have weaknesses in one or more of these areas, representing the fragmentary solutions that are available in disruptive areas. Leaders have a complete vision or an ability to support everything that a quality team will need. In order to be market Leaders, vendors must support leading technologies and architectures with a clear vision of the shift this introduces to applications, and the complexity of testing those applications. In addition, vendors with a complete vision either provide a robust view of the product life cycle or have strong partnerships to help fill in areas of the life cycle in which they are not involved.

Overall, vendors still have gaps in their product lines, with most still focused on the core of automation of functional/regression and load/stress testing, as well as elements of quality management. Common gaps are in unit testing, integration to other areas of the life cycle, test data management and lab management facilities. Many of these gaps are filled through partnerships, but the Leaders are also increasingly filling these gaps. Thus, while the Visionaries and Niche Players will scramble to grab market share, the Leaders and more established players will consolidate through acquisitions as markets mature. These players are generally positioning to become Leaders not only in software QA, but also in the overall ALM market, or are strongly partnered to do so.

**Table 2. Completeness of Vision**

<table>
<thead>
<tr>
<th>Evaluation Criteria</th>
<th>Weighting</th>
</tr>
</thead>
<tbody>
<tr>
<td>Market Understanding</td>
<td>High</td>
</tr>
<tr>
<td>Marketing Strategy</td>
<td>Medium</td>
</tr>
<tr>
<td>Sales Strategy</td>
<td>Low</td>
</tr>
<tr>
<td>Offering (Product) Strategy</td>
<td>High</td>
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<tr>
<td>Business Model</td>
<td>Medium</td>
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<tr>
<td>Vertical/Industry Strategy</td>
<td>Medium</td>
</tr>
<tr>
<td>Innovation</td>
<td>Low</td>
</tr>
<tr>
<td>Geographic Strategy</td>
<td>Medium</td>
</tr>
</tbody>
</table>

Source: Gartner (August 2014)
The past few years have seen an improvement in the integration of IQA tools with the 
either breadth of functionality or revenue. Some notable areas and tools are:

**Cross-browser testing**: CrossBrowserTesting.com, BrowserStack
**Test planning and management**: QMetry, SQS, Zephyr, Hexawise, Testuff
**Load and performance testing**: Neotys, Sauce Labs, BlazeMeter
**Automation**: Ranorex, Coverity (Kalistick), Seapine Software (full ALM and test platform), PushToTest, eXept
**Mobile**: Mobile Labs, Perfecto Mobile, Jama, Keynote (Mobile Testing), ExpertTest, Gorilla Logic
**Test data and test lab**: Informatica, Grid-Tools, Delphix, Skystap, Dell, VMware, Citrix, Kubisiys, Ravello Systems

The past few years have seen an improvement in the integration of IQA tools with the rest of the
application development life cycle management (ADLM) platform, to help automate the overall execution of software projects. A key value here is the integration between requirements and test cases driving traceability for compliance and also aiding in workload management by defining what work is ready and the impact of any changes. Some of the vendors in this Magic Quadrant play in the broader AD life cycle management market, providing tools for requirements, change and work item management. It is important to consider the other tools in the AD portfolio, and how they fit together and support the development practices used by your organization.

The key trends in the IQA market are:

**Drive for productivity.** Enterprises are struggling to keep up with the rapid changes in technology, new client capabilities and the re-emerging need to test on multiple platforms (that is, a variety of browsers and devices). The shift to agile methods drives change in team structure and practices high levels of automation. The majority of time spent on manual testing is still the largest portion of a typical project. In testing, test automation has often been the major focus, but there are many other places to improve efficiency, including test lab management, test data management (subset/mask), build and release automation (DevOps), and analytics-driven testing. This demands that vendors partner or expand to create more comprehensive approaches. It is also creating a driver for outsourcing and construction of testing centers of excellence.

**Cloud.** The cloud has been a strong driver, primarily in reshaping load/stress testing (e.g., Soasta, Neotys, Neustar and Keynote) or for developing solutions for simplifying cross-browser testing (e.g., CrossBrowserTesting.com and BrowserStack); however, overall solutions are still a bit piecemeal, solving a specific problem, but not fully enabling the transformation of testing. This will require a closer combination of Nexus of Forces technologies.

**Mobile.** The mobile market will reshape the landscape for testing. Most mobile testing solutions are provided by new companies that only offer device testing support. We are seeing partnerships, for either products or technology, as a common solution from vendors, but an increasing number have begun to build or acquire products. Devices add a number of new complexities that are important challenges to automation, including location, gestures, accelerometers and orientation, and variant complexity (devices, OS builds, carriers, resolutions and others). Over time, the move to the Internet of Things will lead to increased use of voice input (especially in automotive applications) and a greater need for data and BI testing, and a challenging network topology. Note that many innovative solutions for mobile testing involve cloud delivery (see Note 1 for a description of mobile application testing, and the Gartner Recommended Reading section for relevant references).

**Agile techniques.** The growth of agile development practices continues, and is spreading from developers to encompass the entire team with the adoption of DevOps practices. Organizations desire the benefits of Web-scale application, and often a lack of test automation and overall maturity around quality processes is a key roadblock. These practices put a premium value on collaboration and alter the development cycle, because requirements are mutable and completed incrementally as the project is underway. The majority of tools in the market are still built around the traditional models of development. This also puts a premium on smart, efficient tests and a strong partnership between developers and testers. A test matrix can't take hours to complete, and throwing more hardware at it won't solve the problem. In addition, tests and frameworks that are hard to maintain can't meet the demands, and most organizations will not focus on automation at the GUI layer, because of the lack of capabilities of their tools. This change in who is involved, the pace of change and the layer being automated are also drivers in adoption of open source for many.

**Constant technology updates.** All around the technology stack, providers have moved to more agile release cycles. Packaged applications have shifted from infrequent upgrades to regular updates. Browsers and mobile OSs are updated frequently, and standards are continuing to evolve. Additional challenges are faced by applications built on an SOA, including services that may be provided by third-party partners. This will demand a high degree of test automation.

**SOA.** Testing for services introduces a great deal of complexity, and requires organizations to increase minimum standards just to operate as well as they currently do. Services are supposed to provide business-level agility, yet companies have traditionally struggled with reuse. If services are to provide a dynamically adjustable business operating environment, then they have to maintain a high level of quality and automation for quality assessment and change impact analysis. Expect to see more virtualization come into play in development and test labs, including services, databases and networks (e.g., Skytap, Kubisys and Ravello Systems).

**Open source.** Open-source testing tools continue to make progress, and Selenium in particular has high adoption. Open-source tools fit well in organizations that are working on smaller projects with a more limited technology scope, and where automation is being performed by developers. A growing number of tools are making use of open source, including those from Appvance, Sauce Labs, and Microsoft. The most widely used tools include Geb, Selenium, SoapUI, Sahi, Watir, Bugzilla and JMeter.

**ADLM.** This Magic Quadrant looks at software quality from a suite perspective, including quality management and test execution tools. Leading vendors have broader solutions encompassing requirements and change management and, in general, provide ADLM solutions. Fundamentally, the drive for improved productivity demands solutions that automate workflow and enable collaboration among team members. Expect vendors not only to build partnerships, but also to expand product offerings — through development and acquisition — to compete in this market. ADLM integration is especially important for teams moving to agile, because these help to break down the traditional silos between developers and testers. It is also creating an opening for vendors to enter the market, and will force a decision between a fully integrated experience that may deliver high productivity, but not support all technologies (thus requiring different toolkits for different platforms), and a less integrated generic set of tools or products that integrate with a variety of ADLM hubs.
Expectations for 2015

This year, six of the 14 vendors covered (nearly 50%) reside in the Leaders quadrant. Such a heavy presence of market leaders typically indicates one of two dynamics in a market's life cycle: either the market is maturing to a legacy phase, wherein competition has leveled off, innovation has died away and strong competition has given way to comfortable market entrenchments, or the metrics used to measure the vendors' position in the market are due for a significant "reboot" in order to realign and better represent shifting competitive dynamics.

Gartner believes the IQA market exhibits features of both scenarios. As we discuss above, the market is very mature, yet it also continues to evolve as the key trends discussed in this research would strongly indicate. As a result, we predict that, during the next five years, there will be a number of disruptive changes that will effectively reboot many vendor market positions in future Magic Quadrants. This is already evident in this year's analysis, insofar as many of the vendors have shifted down and to the left. In particular, in 2015, we expect our analysis to further shift focus away from traditional features (i.e., a lower weighting overall) and into innovative areas, such as mobile and service testing.

In 2015, we expect further significant shifts and movements of vendor positions in response to the new metrics and weightings that we will apply to the Magic Quadrant. Moreover, we plan to accompany next year's Magic Quadrant with one or more Critical Capabilities research documents that will provide more detailed functional comparisons of products based on specific use cases. In particular, we expect this supporting research to more clearly depict the competitive positions of vendors that fall into the Niche Players or Visionaries quadrants of the Magic Quadrant.