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Cool Vendors in Application Development, 2015

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The cool vendors profiled here offer a view into the next generation of state-of-the-art application development technologies, showing how agile practices, responsive Web and Web-scale computing efforts are high-profile challenges for today's application development leaders.

Key Findings

- AgileCraft allows organizations to pull data from a large number of projects using a variety of ADLM tools into one modern consistent view, enabling agile practices to scale more smoothly.

- Applitools delivers a next-generation visual testing engine that is well-integrated with existing testing tools and that rapidly identifies issues with GUI appearance across browsers and devices.

- Gradleware provides commercial support for Gradle, an open-source, polyglot build automation that combines the power and flexibility of Ant with the dependency-management capabilities of Maven.

- Meteor offers a full-stack JavaScript framework that unifies client and server/cloud development efforts.

- QASymphony has innovative exploratory testing techniques that set it apart from other agile-focused test management solutions.

Recommendations

- Consider innovative exploratory testing practices in combination with agile development methodologies when requirements are incomplete and time is short.

- Plan for unique challenges when expanding agile practices at scale. Tackle nonagile behavior and culture at all levels with a mix of top-down executive push and bottom-up associate pull to make enterprise agility stick and the principles permanent.

- Justify use of JavaScript for complex applications by identifying clear drivers that make JavaScript appropriate. Recommend that architects choose a purpose-specific framework for all new JavaScript applications.

- Develop and link tools that address multiple facets of the DevOps philosophy together in a toolchain to provide the overall benefits.

Analysis

This research does not constitute an exhaustive list of vendors in any given technology area, but rather is designed to highlight interesting, new and innovative vendors, products and services. Gartner disclaims all warranties, express or implied, with respect to this research, including any warranties of merchantability or fitness for a particular purpose.

What You Need to Know

Software development organizations continue to struggle to be responsive to business needs while dealing with increasing application complexity, security challenges and brand exposure. The five Cool Vendors we focus on in this research represent a broad cross-section of tools that are emerging to improve the software delivery process. They all share a common theme of agility and responsiveness as well — traits that now clearly differentiate cool, new innovations from the old-style approaches of the past. The common themes in our list include:

- Agile Web scale in application architectures

- High productivity languages

- Innovative testing approaches

- At-scale agility and DevOps processes

AgileCraft

Austin, Texas (www.agilecraft.com)

Analysis by Nathan Wilson

Why Cool: AgileCraft is a relative newcomer to the agile application development life cycle management (ADLM) market (see "Magic Quadrant for Application Development Life Cycle Management"). Its flagship product allows organizations to plan top-down and pull data from a large number of projects, using a variety of ADLM tools, into one modern consistent view. This can eliminate the need to move all development teams in a company into one toolset in order to scale. This can be especially valuable for organizations that have an extensive pocket of developers using Atlassian Jira and Team Foundation Server (TFS), as they are typically difficult to move to a different platform. In addition to agile project portfolio management (PPM) capabilities, AgileCraft also offers full-project-level agile functionality for organizations wanting to use one integrated suite.

Built from the ground up to support the Scaled Agile Framework (SAFe) and flexible enough to support other major agile, at-scale practices, the tools offers clean, modern visualizations of the activity in your project portfolio. Integrations from requirements management/ideation vendors to continuous integration platforms allow for an end-to-end view of project status.

Challenges: There are a variety of established players in the agile ADLM market. AgileCraft will have to continue to out-innovate these competitors in order to win market share. Long term, for instance, the Jira portfolio is expected to grow into a capable tool, potentially reducing the opportunity for AgileCraft to address the Jira user base.

Who Should Care: Organizations that are using a federated approach to ADLM and need to have great reporting and visualization across all of the projects in their portfolio should consider AgileCraft.

Applitools

Tel Aviv, Israel (www.applitools.com)

Analysis by Thomas Murphy

Why Cool: Applitools has delivered a next-generation visual testing engine that is well-integrated with existing testing tools and that rapidly identifies issues with graphical user interface (GUI) appearance across browsers and devices. It does this while maintaining automated maintenance of tests. With a growing interest in delivering consistent UIs across a wide variety of browsers and devices, visual verification is growing in importance. Traditionally, visual testing methods have been a combination of easy to use and hard to maintain. This has led most organizations to focus on object identification for test automation, which tends to be a little more complex but is more robust.

Using object identification will verify that the application functions correctly, but it can miss issues of layout, nonvisible text and missing images. Traditional visual testing tools have challenges when screen resolutions change. With these tools, tests just fail. Applitools uses user-defined, expected results in one browser/form factor and then validates and identifies any visual deviation across selected configurations. It can be easily integrated with functional-test-automation software, so that continuous integration has both a functional signoff and a visual signoff.

A page-oriented view, rather than individual elements, is core to Applitools Eyes' working style. This is good for delivering fast validation and ensuring that overall page layouts render correctly across various sizes and resolutions. In addition, the tool enables users to select areas to ignore, such as dynamic text, images or animations. These elements can be automatically excluded not only for the page but also will be recognized across the range of all the test cases executed.

Recently, Applitools released a visual testing tool for manual testers — Applitools Eyes Express — that does not require writing test code and allows running visual validations directly from the browser. This tool currently only works as an extension for Chrome.

Challenges: Keeping up with an ever-changing mix of browsers and development platforms, Applitools Eyes works with a range of test automation frameworks, including Selenium, HP QTP, Microsoft and coded UI. Currently, only iOS and Android are supported from a device perspective. In addition, the vendor does not provide cloud infrastructure for devices or browsers, but it can work with existing cloud solutions and support emulators (which tend to be problematic). Although users must factor this into the total cost of the tool, it keeps Applitools' operational costs down. Another challenge is that it is competing with many open-source tools that provide visual testing,

although the latter don't offer false-positive filtering, cross-browser image comparison or automated maintenance.

Who Should Care: Test managers, user experience (UX) designers and brand managers who are continuously delivering content across multiple browsers or devices, and companies delivering software in short release cycles where visual regression testing is required, should consider Applitools.

Meteor

San Francisco, California (www.meteor.com)

Analysis by David Mitchell Smith

Why Cool: Meteor is a small company with the same name as the Meteor open-source project — a JavaScript framework designed to build on the popularity of the JavaScript language and its increasing use in both client (including Web and mobile) and server. This framework is an example of full-stack JavaScript, an environment that unifies client and server/cloud development via an integrated framework. This type of offering is particularly well-suited for what Gartner calls cloud/client computing (see "Cloud/Client: Where Cloud Meets Mobile and the Nexus of Forces").

Meteor augments Node.js and Apache Cordova with the additional technology necessary to deliver on both developer and user expectations of modern apps, such as reactive UI components, WebSocket-based data transport, APIs that work identically on the server and the client, and a unified build system that targets browser, server and mobile from a single codebase. Additionally, it integrates with the popular MongoDB database as well as the wide variety of JavaScript frameworks (such as Angular). Meteor has its own library of around 4,500 full-stack JavaScript packages, and it also provides access to the existing library of Node.js packages and Cordova plugins.

In addition to the benefits of using a common language (JavaScript), Meteor provides developers with a standard stack of packages that are already integrated and tested together. The standard stack automatically provides advanced capabilities, such as real-time data replication (live-updating user interfaces) and latency compensation (users see their actions take effect immediately, not after a lag as the server responds). Developers can use the standard stack as-is or customize it by adding and removing components.

Challenges: Meteor's technically sophisticated offerings will increasingly compete with capabilities from large vendors as they seek to close the gap on user experience and cloud/client platform technologies. This will increase pressure on Meteor to differentiate and monetize its offerings. Evangelism for ideas has the potential to create a halo effect for its originators, but, again, monetizing that and open-source offerings can be very challenging. Thus far, Meteor has obtained venture funding from Andreessen Horowitz and Matrix Partners.

Who Should Care: Application development (AD) leaders looking to start development of applications that fit the cloud/client paradigm should find Meteor's approach compelling. AD

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leaders and architects should favor tools and architectures that span multiple client as well as cloud environments to best provide an underpinning for cloud/client.

Gradleware

San Francisco, California (www.gradleware.com)

Analysis by Anne Thomas

Why Cool: Gradleware is the vendor behind Gradle, an open-source, polyglot build automation system. Gradle gained a lot of mind share when the Hibernate and Spring projects migrated their builds to Gradle. Top-tier companies using Gradle include LinkedIn, Prezi and Netflix. (Netflix has open sourced a number of Gradle plugins via a GitHub organization called Nebula.)

Gradle combines the power and flexibility of Ant with the dependency-management capabilities of Maven. One significant differentiator in Gradle is that build scripts are written in the Gradle build language — a DSL based on Groovy. By using a programming language rather than declarative XML, Gradle supports expressive flow conditionals, data variables and configurable behaviors in the build process. Gradle also supports plugins for automating tasks and integrating third-party tools.

Gradleware provides product subscription and support services as well as consulting and training services to help organizations make the most of Gradle and optimize its continuous delivery (CD) pipeline. Consulting services include Gradle workshops, designing a CD pipeline, migration assistance, build reviews, plugin development and tool integration. Gradleware also plans to offer Gradle as a SaaS.

Challenges: The company is small with limited bandwidth, and it allocates a lot of its resources to consulting rather than product development. It has a modest multinational presence with offices in the U.S., Germany and Australia. The company prides itself on hiring exceptional technical talent, which implies premium salaries. It also implies more funding for recruiting and less funding for sales and marketing. Exceptional talent is hard to find.

Meanwhile, GitHub is littered with open-source build automation systems and tools (such as Ant, Buildr, Gant, Ivy, Make, Maven and Rake). Although Gradle has a significant cool factor, it is competing with a lot of established technologies. Migration to a new automation system takes time, and it disrupts established practices. Gradleware is addressing the learning curve by providing consulting and training, but Gradleware first must convince organizations to make the move.

Who Should Care: Development teams can gain agility and improve system quality by adopting continuous delivery. A CD practice requires an investment in build automation — from both infrastructure and governance perspectives. Gradleware can help organizations set up or optimize a continuous delivery practice.

QASymphony

Atlanta, Georgia (www.qasymphony.com)

Analysis by Maritess Sobejana

Why Cool: QASymphony is a company that offers an agile-focused, test-management solution for development and quality assurance (QA) organizations. It is primarily available as a SaaS solution with an on-premises option. The company's qTest tools are easy to use and provide two-way integration with popular tools utilized by agile development teams such as Jira, Rally and VersionOne. With its API and software development kit (SDK), QASymphony also provides integration support with other ADLM and test automation tools, such as Selenium, through TestNG. Moreover, the tools include comprehensive reporting tools and dashboards that provide relevant insights to quality, progress, visualization and productivity metrics.

Unlike other traditional test-management tools, QASymphony offers support for exploratory testing. With exploratory testing, you must be able to reproduce the discovered defect. Frustration occurs when developers are unable to understand or reproduce the defect using the tester's instruction, thus wasting their time and effort. To reproduce a defect, you need a record of the exact steps taken as well as the data used and entered along the way. QASymphony's qTest eXplorer aims to increase the efficiency of documenting and recording activities to shorten the turnaround time of defect resolution. The tool accomplishes this by recording every step of a user's interaction with an application. It uses that information to automatically generate test cases with inserted expected results or to create detailed defect information. To improve visibility and accuracy of information, this tool allows users to annotate the screens while testing. The recording and annotation are supported for different types of applications, including mobile, Web and desktop. QASymphony's cost-effective, tool-driven, test-management solution will be a very useful tool for companies to blend basic test management practices with test automation.

Challenges: The overall ADLM and testing markets are considered mature with well-established competition. These markets continue to evolve with new vendors regularly entering the market through acquisitions or by creating new, point-specific tools as new technologies or methods arise. Many of QASymphony's offerings are competing with capabilities from a wide variety of vendors. Test management capabilities are often included in products and suites of established vendors, which will pressure QASymphony to do something to stand out. QASymphony needs extra marketing efforts to gain recognition beyond noise. It must continue to innovate and adhere to a clear source of differentiation from key competitors, while extending partnerships with vendors and service providers.

Who Should Care: Development managers and QA leaders who are currently limited by testing functionality available in their ALDM (e.g., Jira) as well as managers who need real-time views of project quality and productivity should consider QASymphony. In addition, development and QA teams struggling with lack of detailed documentation for traditional manual and exploratory testing will find the company's exploratory testing support features beneficial in saving time in capturing test scenarios and defect information.

Where Are They Now?

Typesafe

San Francisco, California (www.typesafe.com)

Analysis By Mark Driver

Profiled in "Cool Vendors in Application Development, 2012"

Why Cool Then: Typesafe offers commercial service and support of the Scala programming language, the Akka middleware framework for distributed cloud applications, and the Play Web framework.

Where They Are Now: The recent successes of competing technologies, such as Node.js, are showing the strengths of Typesafe's early pioneering efforts. The company continues to champion the reactive-application-architecture model among Java- and Scala-centric development teams aimed at Web scale application deployments.

Who Should Care: Reactive programming concepts are coming to the forefront in a list of emerging technologies that will better enable IT leaders to fully exploit next-generation multicore hardware and cloud infrastructures. IT organizations with investments in Java/Scala should consider the potential benefits in augmenting their application development portfolio with reactive programming architectural concepts and programming skills and supported software solutions (e.g., Akka and the Play Web framework). Adopters seeking third-party commercial service and support for these investments should consider Typesafe as a premier source of Java/Scala and reactive programming expertise.

Gartner Recommended Reading

Some documents may not be available as part of your current Gartner subscription.

"Cloud/Client: Where Cloud Meets Mobile and the Nexus of Forces"

"JavaScript: Past, Present and Future"

"Cool Vendors in Application Development, 2014"

"Magic Quadrant for Integrated Software Quality Suites"

More on This Topic

This is part of an in-depth collection of research. See the collection:

- Cool Vendors 2015: Business and Things, the Next Innovation Frontier

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