



## Vendor Profile

# CAST Leverages Software Analytics to Help Address Software Risk and Business Disruption

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## IDC OPINION

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Software drives competitive advantage and innovation. With increasing rates of business disruption and cybertheft, quality and security are pressing issues. In the current technology and economic climate of increased challenges and complexity, businesses must understand and analyze software beyond the confines of traditional approaches to automated software quality (ASQ). IDC sees increasing demand for deeper code analysis, architectural assessment, and software measurement as organizations bank on mobile platforms and deploy in the cloud and as products in the manufacturing sphere depend increasingly on embedded software for differentiation. Companies are being driven to understand the architectural impact of their design choices across application portfolios, and they need visibility "under the covers" via capabilities such as static and dynamic code analysis to understand the consequences to core software that runs their businesses and their transactions. As software and sourcing complexity mounts, the business risk this poses to IT executives increases their need for meaningful insight into mission-critical systems. We see growth in this arena for the following reasons:

- IDC's software quality analysis and measurement (SQAM) market assessment showed growth of 12.9% in 2012 to \$422.55 million and of around 15.2% in 2013 to \$486.76 million and a forecast for 2014-2018 that results in the expected 2018 market revenue of \$973.3 million, with a CAGR of 14.9%. This growth (on low numbers) results from demand for code quality in increasingly complex development and deployment environments (including mobile, cloud, and embedded).
- User engagement and the need for visibility into architecture and code quality via static and dynamic analysis, along with effective metrics to assess performance of internal and external resources, are driving adoption in this competitive area of the automated software quality market, which also incorporates related revenue from the security and vulnerability management (SVM) market.
- As companies reinvest after the recent downturn, financial constraints, global competition, and innovation drive demand for rapid access to measurement and quality solutions for executives to evaluate applications and project success. This complements emerging quality needs for mobile, ERP, security, cloud, and other areas.
- With the advent of agile approaches to both development and product evolution (including software for mobile and embedded environments), application release cycles and churn are faster than ever. Business-critical branding and demand for software necessitate speedy turnaround. Compressed release times, from days to hours, drive the need for software visibility, insight, and collaboration. These combined factors and others that push both the complexity and the need for speed (without loss of quality) are driving users to adopt automated solutions.

## IN THIS VENDOR PROFILE

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This IDC Vendor Profile is one in a series of IDC studies that examine automated software quality solutions, and it provides both vendor analysis and customer reference context for technology adoption. This Vendor Profile assesses the ASQ strategy and position of CAST, a vendor targeting the software quality analysis and measurement (SQAM) arena. Here, we discuss CAST's Application Intelligence Platform (AIP) and HIGHLIGHT offerings and the company's architectural analysis portfolio solutions. We place CAST within this product category and relative to trends in user adoption for the SQAM market and in the context of an economy that remains volatile and demands efficient access to software quality and deployment. We also include summaries of two CAST customer references: a money management organization and a services company that made use of the analytical capabilities of CAST solutions to gain insight into their applications and application portfolios and increased collaboration, innovation, and efficiency as a result.

## SITUATION OVERVIEW

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### Company Overview

Founded in Paris in 1990, with initial R&D efforts and the launch of its first product in 1996, CAST has sought to provide visibility into source code structure and how applications are architected. The company has offices in eight countries, with its U.S. headquarters in New York. CAST's products are as follows: CAST Application Intelligence Platform (AIP) including Application Analytics Dashboard, Application Engineering Dashboard, Architecture Checker, Analyzers, Administration Kit, Discovery Portal, Function Point Analyzer, Appmarq, and HIGHLIGHT.

CAST's focus is on architectural and software analysis to help capture and quantify differentiated aspects of application quality and size, with the company's portfolio of products as part of the CAST Application Intelligence Platform. CAST has 270 clients and 250 employees and had approximately \$40 million in software license revenue for CY13 by IDC estimates. Last year, CAST grew around 11%, driven in part by the increasing urgency for IT executive visibility into software application portfolios and design to help address improved customer experiences while responding to pressures to outsource, reduce operational maintenance costs, and better understand impact on multimodal deployment. With its focus on enabling organizations to assess and evaluate the underlying impact of architectural design and its success in the global systems integrator (SI) market, CAST is poised for ongoing growth in 2015. CAST is considered a Leader in the Software Quality Analysis and Measurement IDC MarketScape and as a Major Player in the enterprise ASQ IDC MarketScape and the cloud testing and ASQ SaaS IDC MarketScape.

### Company Strategy

CAST's core solution – the CAST AIP – provides IT management with visibility into the health of a company's applications. The analytics generated by AIP create a "heat map" of structural risks in the software while producing related quality and productivity metrics. This is used by application development and maintenance (ADM) executives to create an additional intrinsic set of metrics of their software like changeability and robustness – to supplement existing budget and operations metrics.

The AIP data is supported by structural analysis to help provide current and consistent data about the way in which the software was constructed. Managers can proactively explore granular details and share both qualitative and quantitative information with the business regarding risk, complexity, and technical debt and with developers and suppliers regarding project process and remediation of software design flaws. CAST can analyze over 30 languages commonly found in the IT landscape, including package software, database procedures, and data models.

Based on its ability to analyze and integrate the metadata of an entire application, AIP provides an automated count of function points that adheres to the Automated Function Point standard released by OMG with the Consortium for IT Software Quality (CISQ) in early 2013, which is based on IFPUG methodology. AIP also provides a measure of enhanced function points, which tracks the work accomplished between versions. These measures provide a consistent counting mechanism that can be used frequently to support productivity and benchmarking analyses.

In addition, CAST provides a portal-based dashboard, with approximately 1,200 rules to help interrogate codesets, to which users can add custom rules. This can enable companies to create a framework of architectural and/or design templates and patterns they can adhere to. Users can employ specifications such as PCI standards that dictate how code should be developed and deployed. Users can coordinate that with automated peer collaboration and review (as appropriate). Issues such as security and privacy – for which the consequences of software failure can lead to business failure – can also be structured in CAST AIP. Leveraging CAST's tools, IT executives can then help measure, control, and improve the software quality and design of business applications and help their development teams improve software releases. CAST's system-level analysis fully complies with the CISQ guidelines for reliability, security, and performance efficiency risks.

CAST HIGHLIGHT for APM, officially launched in September 2011, offers a cloud-based quick portfolio analysis for risk, complexity, and size without the need to upload source code. CAST is now investing in a separate team to bring CAST HIGHLIGHT to market as a standalone SaaS product while continuing to use this product in the channel. CAST is also working to productize cloud readiness metrics to be used in overall application assessments as a way to determine whether an application can be used/ported to the cloud.

As a result of its knowledge base of rules, CAST can provide a conduit for establishing more coherent coding patterns across the organization to improve collaboration. As integration with other platforms evolves – CAST currently supports IBM Rational's platforms and has links to other ALM products such as Jenkins and JIRA – CAST has evolved a partner program with these top systems integrators (SIs) – namely, IBM Global Business Services, Capgemini, Sopra Steria Group (rebranded after their merger), Atos, Tata Consultancy Services, Tech Mahindra, HCL, Infosys, and Wipro – industrializing ADM delivery and/or engaging in global efforts in CAST-enabled services. Some such services are Rapid Portfolio Assessments powered by CAST HIGHLIGHT, "Structural Quality Gate" services powered by AIP, or assessment services powered by Appmarq – CAST's industry benchmark repository. The company's goal is to establish coordinated quality life-cycle management and a more partner-focused organization.

Current global economic challenges also provide opportunities for CAST. Increasingly, organizations find themselves with ever fewer IT resources, while they must manage increasingly complex software portfolios in the wake of mergers, acquisitions, and corporate consolidation. Businesses are driven to

seek visibility into their existing and acquired application portfolios. CAST provides capabilities that offer context for and insight into application design to help assess risk and value with regard to application stability. In addition, CAST provides governance over the quality of outsourced work since software quality metrics are increasingly being incorporated into the SLAs of outsourcing contracts.

One of the challenges for CAST is that introducing measurement in organizations is inherently a disruptive process. Also, establishing an effective market presence in a software quality "world" that typically considers automated regression and load testing is a primary or sole focus for software quality. And because CAST is a smaller – but growing – provider in a difficult economic climate, users initially may be hesitant to push forward with CAST adoption. Yet those adoption concerns tend to be mitigated by a vibrant user reference base and fairly quick returns with cost-efficient assessments and structured frameworks to provide consistent measurement and quality design approaches. Opportunities for CAST also include the emergence of services approaches, SOA, and cloud and the need for CAST to market its products in support of nontraditional software models for service quality. In addition, some users mentioned wanting to have an option for CAST that specifically targets developers during the code creation process. Though this would not provide a software risk analysis, which requires a system-level view, it would allow developers to check their work early on in the life cycle (rather than primarily targeting executives and managers).

## FUTURE OUTLOOK

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Overall, CAST has a differentiated solution in a market demanding greater visibility into ADM outcomes, source code structure, and architectural stability. With emerging standards and regulation combined with a rich measurement model and rules base for guidance to end-user companies and a growing outsourcing market with strong and evolving SI partnerships, CAST is well positioned moving through 2015 and beyond.

## User Reference Summary

The references with whom IDC connected benefitted from the analytical capabilities of CAST as a means to gain insight into their applications and application portfolios. For instance, a major money management company leveraged CAST to improve the overall quality of the internal applications it creates and on which the company runs its business. Seeking to increase coordination across siloed development teams and effective quality metrics from the early part of the life cycle architecturally through to the handoff to deployment, this organization brought in CAST. (The development teams were well connected to the business but not well coordinated with one another.) Although the money management company already had testing tools in place from both Micro Focus (Silk) and HP (Quality Manager, LoadRunner), the CAST tools served a differentiated function for understanding the software in place. This company opted for CAST because it supported a range of key development technologies important for this organization (including PL/SQL). This company has around half of its applications in CAST now, and all new applications are put into CAST, with the intent to put all relevant apps into CAST.

As part of the decision-making process for choosing a software quality analysis and measurement solution, this money management company ran three different projects through CAST, reviewed the results with development teams, showed what type of information it would be receiving (that it was

valuable and helpful), and then began the rollout of CAST. The company has now completed incorporation of its most critical applications and has all new projects also going into CAST.

When IDC spoke with the organization, it had two separate CAST infrastructure systems in place. The first infrastructure system was used for day-to-day development so that on a weekly basis, or more often, teams could run through measurements of code to see changes in violations; this transient data was kept around for a week (which the teams could keep as a baseline for a follow-up snapshot). There were 60 apps using that system, with 200-300 developers working those projects. The second infrastructure system the company had in place was the release infrastructure; there, the initial plan was that prior to an application being released, the company would run another CAST analysis to track quality trends for the same portfolio of 60 applications. This system was used by senior management, the CIO, and the CIO's direct reports to monitor apps for which they were ultimately responsible. Each had a dashboard to look at a portfolio of apps at a high level and then to drill down to see individual violations and where those violations were occurring.

CAST hadn't let the company nest portfolios of apps, so there was no single overall portfolio of apps. The nesting feature is in a version that has been released, but the version at the money management company hadn't been upgraded. Once the version is upgraded, then the company would have a dashboard available to the CIO for an overall metric across portfolios.

The primary use of CAST by this organization was to have a better idea about applications in use and to track the code over time. Evaluation metrics helped create a form of payback for this organization also to support project and code quality visibility and their work with third-party service providers. CAST provided a process and analysis with analytical capabilities so that when code was delivered, the company had a process and tool through which to run the applications to contractually minimize numbers of significant bugs via a metrics framework.

In terms of improvements, this organization would like to leverage nested portfolios, and it was expecting that upcoming versions will improve the speed at which configuration of applications can happen.

This organization's advice is to make sure that lead developers and managers are involved through the review and selection of the code analysis product one might choose and also to have a fairly strong central team to do the initial implementation and deployments. Once this company's staff were running and working with the tool, the company handed off the mechanics to those working with it day to day. This company got the development team's involvement early on. The majority of the team saw a need for the tool and helped select it, had begun to like it, and were bought into adoption already. When the IT community feels an ownership of the tool and has a stake in the outcome, that can help in successful adoption. This project went very well for the company; the teams were excited about using the new capabilities, and enough critical mass formed for broader adoption. There were so many apps that the company couldn't keep up with, and this is better than the other way.

While CAST's products provide metrics and data, they were used typically by management rather than development teams to assess overall software resilience, efficiency, security, design, and architectural consistency. Best practice is to use such insight not as a bludgeon to punish developers for poor coding patterns but rather as a means to improve teamwork and efficiency.

Many of the global systems integrators industrializing their delivery centers with CAST see it as an ongoing technical training in complex, multitier software engineering. One organization with which IDC spoke used CAST to quickly and quantifiably demonstrate adherence to PCI standards. CAST can also help identify and measure business risk related to IT systems and help IT managers improve user satisfaction while driving down maintenance costs over time. When used collaboratively across teams, CAST can help support reuse, thereby reducing rework and enabling the use of key performance indicators (KPIs) for groups of developers to evolve skill sets and more effective design approaches to software creation.

A major beverage company's center of excellence is using CAST to get visibility into code quality to support the company's business. This organization has outsourced development for functional and technical development. The company is using CAST to measure quality as it rolls out software as well as legacy code created by its partners. CAST lets the company focus on appropriate remediation efforts to deal with quality issues. For the company, an IT outage can mean that trucks can't roll from distribution centers. One of its bottlers in Germany has gross revenue of \$4 billion. The cost incurred as a result of one day of not being able to send out trucks out can mean multiple millions of dollars. The company can't make up that kind of loss if it occurs. Specifically, once the company implemented CAST, it was able to focus on what to remediate – its criticality is out there, with usage-based reporting and looking at the entire app as a whole (rather than pieces). CAST helps inform the company's efforts on code remediation to know which code to attack. CAST gives the company information in finite executive format so that it knows what it needs to work on. Otherwise, the company would have to spend more money to figure out what to remediate and waste time on efforts that have no value. At this organization, upper management now dictates that releases contain a CAST analysis prior to deployment - the business impact of quality in this context has now engaged executive management as well.

## ESSENTIAL GUIDANCE

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### Evaluating Code Analysis Automation

Users should engage in gap analysis assessments to determine core needs for ASQ across core emerging areas – such as software quality analysis and measurement, ASQ SaaS, and cloud testing – and evaluate and adopt appropriate automated technology and testing services. We recommend that users evaluate software quality analysis and measurement solutions in the context of business demand for multimodal development – particularly on mobile and cloud, with embedded solutions emerging. Constrained quality staff in the face of increased complexity and utilization of outside consulting firms to better evaluate software capabilities, performance, and success also demand automation for successful software quality governance and leverage of SQAM solutions.

Since the economy remains volatile, the efficiencies of automation remain both alluring and an essential element to IT efficiency and competitive opportunity for businesses. The increasing business criticality of software and increased business exposure to software risk combined with the emergence of complex, disruptive trends will continue to drive the need for process improvement – SQAM specifically and ASQ and ALM strategies overall. The ongoing demands for complex sourcing – including both outsourcers and open source – require oversight and management of quality as an imperative. Compliance, security challenges, and the emergence of services and the need for user

experience testing on both mobile and existing Web platforms heighten the need for SQAM tools. Understanding the impact of underlying architectural decisions becomes evermore critical in a service-based IT and business environment. We expect the need for software quality analysis and measurement to increase during 2015-2016, given the need for deeper analysis into the impact of architectural design on software performance and optimization as well as static and dynamic analysis related to optimization and security and risk mitigation. Technology alone is insufficient, however; as was indicated by CAST's customer references, effective adoption of automated solutions must be accompanied by appropriate organizational and process change to help ensure consistent usage. This is even more the case in core emerging business-critical areas such as SQAM. As customer examples indicated, these are "must-have" business software environments to enable deeper analysis and insight into core corporate software assets that sustain innovation and operations as well as customer and partner relationships. We expect SQAM to be accompanied with business process as well as with effective performance optimization and application testing.

## Evolution for CAST

CAST needs to continue to evolve both its portfolio and its partnerships. Most recently, the company announced a deeper relationship with one of the major India-based SIs in 4Q14; this is notable because this provider had previously been seeking to create its own code analytics capability. A significant number of offshore SIs have committed to CAST relationships.

Ongoing engagement with the emerging embedded market and further leverage of technology partnerships with vendors and standards organizations like the OMG to create metrics standards that incorporate and further evolve areas such as function point analysis to make these frameworks relevant to current environments are a good basis upon which to build. These efforts can help bridge the divide between emerging platform deployments across mobile, social, embedded, and big data environments and "tried and true" approaches to managing, measuring, and analyzing code quality for business success. Given the complexity and risks of current software development, these kinds of improved approaches to code visibility, management, and quality can't arrive soon enough.

## LEARN MORE

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### Related Research

- *Establishing Software Quality Analysis Strategies for Business Innovation: Addressing Third Platform Complexity* (IDC #253257, forthcoming)
- *Worldwide Software Quality Analysis and Measurement 2014-2018 Forecast and 2013 Vendor Shares: Code Visibility Coordinates Quality with Security to Drive Market Growth* (IDC #252416, forthcoming)
- *Worldwide Automated Software Quality 2014-2018 Forecast and 2013 Vendor Shares: Some Growth in ASQ with Adoption Projected for Mobile, Cloud, and Embedded* (IDC #251643, September 2014)
- *Worldwide Application Performance Management Software 2014-2018 Forecast* (IDC #251205, September 2014)

- *Worldwide Application Performance Management Software 2013 Vendor Shares* (IDC #250361, August 2014)
- *Seeking to Bridge the Quality and Security Gap for Software: Synopsys Completes Coverity Acquisition* (IDC #lcUS24928814, June 2014)
- *IDC MaturityScope: DevOps* (IDC #249471, June 2014)
- *Strategies to Leverage and Manage Open Source: Major Media and Information Company Benefits from Governance* (IDC #249218, June 2014)
- *Worldwide Agile Application Life-Cycle Management Software 2014-2017 Forecast and 2012 Vendor Shares: Quick Access Drives Adoption and Business Agility* (IDC #248800, May 2014)
- *SmartBear Acquires Lucierna Extending Quality Out to Application Performance* (IDC #lcUS24554713, December 2013)
- *Worldwide Software Quality Analysis and Measurement 2013-2017 Forecast and 2012 Vendor Shares: Leveraging Code Insight to Avert Risk and Optimize Businesses* (IDC #245146, December 2013)
- *Worldwide Automated Software Quality 2013-2017 Forecast and 2012 Vendor Shares: Lower But Ongoing Growth Driven by Mobile, Cloud, and Complex Deployments* (IDC #241927, June 2013)
- *IDC's Software Taxonomy, 2013* (IDC #241527, June 2013)
- *IDC MarketScope: Worldwide Cloud Testing and ASQ SaaS 2012-2013 Vendor Analysis – Enabling Business Agility and Quality in the Cloud* (IDC #237597, February 2013)



## About IDC

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