Driven by cloud and agile technologies, the ALM market is evolving and expanding. Although success for agile is important, the challenge is that the tools that work best for agile projects lack requirements definitions and management, as well as support for the management of nonagile project elements.

The application life cycle management (ALM) tool market is focused on the planning and governance activities of the software development life cycle (SDLC). Traditionally, this has been the combination of software change and configuration management (SCCM), requirements management and quality management. ALM is evolving, with a focus on coordinating the planning and execution of software projects with an emphasis on work items, planning iterations and coordinating actions across teams. The market has been driven by organizations that need to improve efficiency across teams, and to build and sustain engineering productivity. Most companies were doing one or two things, but were not following a comprehensive ALM approach. Three trends are driving companies that demand an integrated team approach:

**Enterprise agile** — Once projects move beyond small teams of developers, tools that enhance collaboration and reporting (but don't get in the way) are critical.

**Cloud computing** — The ability to build applications that use cloud technologies and tools that leverage the cloud are critical to improving operational efficiency.

**Mobile Web** — The rapid uptake of mobile devices, as well as growth in number of browsers, brings back the challenge of multiplatform variant complexity.

These trends emphasize issues we have seen during the past five years that have been the basis for the adoption of integrated ALM products, rather than silos: agile teams, geographically distributed projects, complex processes or complex products. Although we are seeing more integrated ALM adoption, clients rarely start with a vision of massive enterprise deployment, and many of the products evaluated in this market are evolutions of siloed solutions. Consequently, we see initial deployments proving the concepts, then a move to viral adoption and broader build-out — for example, requirements management may be deployed first, then test management and the connection of requirements to test cases.

Although products are evolving from silos of function, most companies have several overlapping ALM solutions, rather than one. This reinforces the need for tools to work together, and for solutions that bridge the silos with workflow, reporting, etc. Furthermore, most companies will continue to need a mixture of application development tools. The more diverse your business and technology, the more diverse the tools you will need to support delivery. Evaluations should place a high value on tool-to-tool integration mechanisms, using XML and representational state transfer (REST) or broadly adopted proprietary mechanisms.

Gartner estimates that the ALM market, estimated at $1.5 billion for 2011, will continue to grow at a compound annual rate of about 3.9%. Our expectation is that the market will see a dip this year that will place pricing pressure on many vendors and create opportunities for smaller, niche-oriented vendors, as well as software as a service (SaaS) and cloud-based software. Portions of the market will remain stronger than others. Of the products in this Magic Quadrant, much of the growth is in the agile planning category. There is also decent growth in the requirements area, although much of this is focused on requirements definition tools, which only a subset of the companies in this Magic Quadrant provide.

The requirements process is still one of the most immature areas of the market, although improvements in traceability from requirements to test cases are providing more drive for stronger capabilities. Although sales have generally recovered since the 2009 downturn, certain older, larger products have lagged behind, as less expensive counterparts have made inroads. Smaller, innovative companies that tend to have lower-priced or SaaS-style offerings are benefiting more, as buyers try to do more with less.

Gartner expects that there will continue to be a variety of ALM options. This will include agile development teams using lighter versions of ALM offerings, continued growth of open-source options and an increasing number of cloud-delivered, ALM platform as a service (PaaS) solutions. ALM enables sustainable agile practices and distributed agile teams by creating a management framework that provides consistent, auditable records of the decisions and activities of agile teams. The collection of stories and the pulse of the agile team’s change and development
activities form a sort of team memory. In addition, the ability to have consistent metrics to drive improved decision making and process improvement is a key value.

Most organizations still don’t procure tools from an integrated ALM perspective. This is generally because a company needs a specific set of functionalities, and there isn’t a concerted effort to get the entire IT organization onboard with a single, integrated product. However, we are seeing vendors get a foot in the door with one group, and then expand their presence. Generally, however, most organizations have a large economic barrier to buying a solution just to gain integration, especially if it requires switching out existing preferred solutions. Thus, most buying is a gap-filling exercise that involves improving requirements, supporting a specific development process or replacing a tool that isn’t meeting needs.

Broad adoption of ALM will require significant organizational change. Wide adoption among organizations will require them to adopt disciplined execution processes in a number of phases of the development cycle. As evidence of ALM’s effectiveness accumulates, these cultural changes will seem less forbidding, and broader deployments will accelerate. Until then, we expect mainstream process improvement initiatives to continue to focus on implementing point offerings in test management, requirements elicitation and management, and other similar processes.

The wide range of ALM offerings leads us to recommend a scenario-based evaluation process to narrow the list of candidates (see “Selection Criteria for Success in Choosing ALM Products,” “Toolkit: RFP for Application Life Cycle Management and Related Tools” and “Toolkit: RFP Template for Application Life Cycle Management and Related Tools”). Client-specific ALM use cases will incorporate one or more of the following elements.

**Agile-Centric ALM**

One key driver for a move to ALM is the move to agile — in particular, scaling agile to larger projects and distributed teams. Agile elements include task board, burn down, velocity and other reports, user stories and continuous integration. Pure agile teams are often looking for focused tools that support the practices common in agile development, and the leading providers also have strong support via training and education materials.

**Geographically Distributed Teams**

Whether a team is made up of internal employees, or a mix of internal and external resources, one value of ALM is helping keep these teams on the same page about the software project. All ALM products provide help here, but critical elements can include threaded discussions, change request approval management and review process support. These facilities are important to all teams, because a major source of rework results from information that has been dropped on the floor. However, what is key to this relationship is choosing tools that people will use, and applying practices that capture information (e.g., assigning scribes in meetings).

**Process-Centric ALM**

Some organizations need to support specific process control or deal with complex requirements that lead to more-complex source trees and test harnesses. This may also include regulatory requirements. The inherent challenge generally faced with these tools has been making them easy to use and administer, and improvements have been slow to appear.

**Complex Variant Management**

Situations in which multiple sources of requirements and multiple delivery vehicles must be maintained are characteristic of embedded software and commercial software packages. Complex requirements management and variant tracking are needed. Integrations with product line management software are becoming important as well.

**Solutions for Integration**

All organizations are likely to end up with products in the ALM space from several organizations. This will include independent teams developing for different platforms and cases in which teams will have solutions that work, but need best-of-breed functionality (see “Application Life Cycle Management Matters Where Diversity Persists*”). This means that integration facilities are fundamentally important. All products have integration facilities traditionally presented as an extensibility API and several are now also gaining XML-based REST interfaces. There is also growing need for a standard REST data definitions and interfaces defined by Open Services for Lifecycle Collaboration (OSLC). However, there is a great deal of variety, with many just being a layer over the old APIs.

A number of products are focused on acting as integration hubs, and an increasing number of vendors rely on common integration facilities. In short, most vendors know that integration is important, but it tends to end up at the bottom of the features list, so you must ensure that the products you want to integrate are supported. In addition, you should understand whether the integration is a manual, user initiated, push/pull activity or if it is more of a publish-and-subscribe automation that supports real-time synchronization. Manual integration initiation means there is strong potential for the endpoints to be out of synch with each other, leading to stakeholder communication challenges in the ALM system. Products that have not been included in this Magic Quadrant, which should be considered if your scenarios have a strong integration and workflow focus, include Tasktop Sync, Kovair Omnibus and Digite Integrated Process Framework.

Specifically, this includes the ways customers receive technical support or account support. This can also include ancillary tools, customer support programs (and the quality thereof), availability of user groups, service-level agreements and so on.

**Operations**

The ability of the organization to meet its goals and commitments. Factors include the quality of the organizational structure, including skills, experiences, programs, systems and other vehicles that enable the organization to operate effectively and efficiently on an ongoing basis.

**Completeness of Vision**

**Market Understanding**: Ability of the vendor to understand buyers’ wants and needs and to translate those into products and services. Vendors that show the highest degree of vision listen and understand buyers’ wants and needs, and can shape or enhance those with their added vision.

**Marketing Strategy**

A clear, differentiated set of messages consistently communicated throughout the organization and externalized through the website, advertising, customer programs and positioning statements.

**Sales Strategy**

The strategy for selling products that uses the appropriate network of direct and indirect sales, marketing, service, and communication affiliates that extend the scope and depth of market reach, skills, expertise, technologies, services and the customer base.

**Offering (Product) Strategy**

The vendor’s approach to product development and delivery that emphasizes differentiation, functionality, methodology and feature sets as they map to current and future requirements.

**Business Model**

The soundness and logic of the vendor’s underlying business proposition.

**Vertical/Industry Strategy**

The vendor’s strategy to direct resources, skills and offerings to meet the specific needs of individual market segments, including vertical markets.

**Innovation**

Direct, related, complementary and synergistic layouts of resources, expertise or capital for investment, consolidation, defensive or pre-emptive purposes.

**Geographic Strategy**

The vendor’s strategy to direct resources, skills and offerings to meet the specific needs of geographies outside the “home” or native geography, either directly or through partners, channels and subsidiaries as appropriate for that geography and market.

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*Figure 1. Magic Quadrant for Application Life Cycle Management*
Vendor Strengths and Cautions

**Atlassian**

Atlassian has focused on the creation of a suite of stand-alone, yet highly integrated, products, including JIRA, which is the foundation of its strategy. It has broad adoption for issue management, with strong growth in project tracking. The company has developed or acquired a broad set of offerings designed to cover concept to launch activities, with a strong design emphasis on collaboration. The company has invested heavily in a shift toward SaaS-based tools, including rearchitecting to support multitenancy and implementing RESTful APIs. The company is also continuing to invest in support for agile development, with a focus on tools that will aid in cross-project reporting and will continue to exploit technology shifts — for example, its Distributed Version Control Systems (DVCSs), such as Mercurial and GIT, and more-collaborative, requirement-gathering approaches. The products support a market-leading 14 languages and have proven scale in deployments of 20,000 users.

Atlassian intentionally avoids using ALM as a term, because it is unsuited to its design and development philosophy. Instead, Atlassian has established a corporate brand as the “Concept to Launch” company, and has focused on delivering products that end users love to use in the four key phases of development: concept, plan, build and launch. Although the company has various product bundles, each product in Atlassian’s portfolio is designed to be a successful stand-alone product. Atlassian invests heavily on integration features and has support from other integration products, such as Tasktop.

In addition, Atlassian has created integration in areas the other vendors have not exploited to leverage the Internet, including OpenSocial Dashboards, Google Apps, Gliffy, salesforce.com and Crowd. Overall, the product set has more than 650 commercial and open-source plug-ins, including integrations with third-party products. Although Atlassian has a global network of 250 system integrator (SI) partners, it has made the most use of the social context of the Web and the ethos of a modern, community-oriented structure, rather than a traditional partner/reseller ecosystem. The offerings will be particularly attractive when social collaboration is more strongly emphasized than formal processes.

The company now offers its solutions as on-premises or SaaS, and it expects most organizations to use a mixture. This has created a need to rearchitect the tools to support multitenancy and use RESTful APIs.

Atlassian’s products support:
- Requirements management
- Project management
- Quality management
- Defect management
- Build management
- Release management
- Task management

Atlassian’s products have:
- Reporting
- Integration hub
- Marketplace

**Strengths**
- A large customer base from its JIRA issue management solution
- Flexibility of packaging and licensing options
- Exploitation of Web technologies
CollabNet defines ALM by three key attributes: global collaboration, life cycle traceability and openness/extensibility. The company believes that global collaboration is best supported by using a centrally available cloud platform that can provide status updates and report analytics to all stakeholders.

Although the product line is relatively small, with four core products, there is overlap among the elements — in particular, TeamForge and ScrumWorks. Directionally, CollabNet is pushing out from its traditional base, providing support for agile adoption across the entire software delivery cycle (including continuous integration, delivery and deployment) and is growing kanban and lean content to help in reaching a broader set of users.

The company is actively extending its cloud solution based on the acquisition of Codesion. This continues to extend the company's position in SCCM, where it plays a strong position in both the SVN and GIT communities. It will need to be leveraged into the rest of the product line — for example, its ALM federation environment, CollabNet Connect. This puts the company in a good position, but it will need to clarify its messaging and product road maps to better contest enterprise opportunities. The company has a rich history in collaborative development and support for developer communities. Key elements of CollabNet have been process orchestration and integration with a wide set of tools.

With its baseline of Subversion support and development, CollabNet has a large customer base, and its largest site has more than 55,000 users. Its products are available in three languages, and it has a reasonable global presence, although it doesn’t not have the breadth of global sales and support partners of the largest vendors. The company recently added a reseller partnership in Brazil to fill its gap in South America.

CollabNet's products support:
- Requirements management
- Project management
- Quality management
- Defect management
- Build management
- Release management
- Lab management
- Task management
- SCCM

CollabNet's products have:
- Reporting
- Integration hub

Strengths
- Large customer base
- SCCM support is broad and widely familiar
- Long experience with SaaS support of developers
- Ability to execute on acquisitions to adapt to market changes

Cautions
- Acquisitions have created overlaps
- Lack of presence in South America
- Management outside SCCM is less mature

HP
For many years, HP Quality Center has held a dominant position in the market for quality management. For the past few years, the company has been broadening its footprint by adding requirements management and overall development planning, and it is now introducing ALM 11. HP provides a global presence and proven scalability, with installations of as many as 65,000 users, support for 10 languages and a rich partner ecosystem. Because the company spent so many years focused wholly on the quality management market, it has strong integration APIs, supporting integrations with many other products.

Although HP has put together a strong product that will continue to appeal to quality assurance (QA) organizations and is winning approval from business analysts for requirements management. However, as the company expands its footprint, this will create conflicts with some of its partners (a common story for most ALM providers). The company has partnered with Tasktop to extend its reach into Eclipse, and to provide additional integration capabilities.

HP is one of the first vendors to articulate an ALM story that goes beyond the SDLC to include...
demand and portfolio management, architectural governance, with more traditional ALM functions and to feature the connection of business value metrics to best align teams with business goals.

HP supports operations and the ongoing operational aspects of the life of an application — deployment, production management and IT service management (ITSM), complementing and supporting ITIL. The core value of the system is its single repository approach, which enables traceability across all artifacts.

HP ALM supports traditional and agile practices (with the addition of the Agile Accelerator extensions). One strength overall for HP is workflow and change management, as well as reporting facilities. For organizations that require strongly managed process (waterfall or agile), HP is conducting an incremental evolution program toward the use of agile, and it expect to have an enterprise agile approach, for which these tools will provide the required foundation. However, the company needs to build a stronger presence in the developer and agile communities in the same way it has addressed the software quality market. With a strong presence in quality and the ability to relate a business-level message, HP is in good position to challenge the market leaders; however, it will be challenged to reach developers and be pressured regarding its pace of innovation for cost-effective solutions.

HP’s products support:
- Requirements management
- Project management
- Quality management
- Defect management
- Release management
- Lab management
- Task management

HP’s products have:
- Integration hub
- Reporting

Strengths
- Market dominance in the software quality market
- A strong global presence
- Proven scalability
- Large numbers of integrations

Cautions
- Unlike IBM or Microsoft, HP lacks a dedicated developer network
- HP supports only Windows and Internet Explorer for client access (Visual Studio and Eclipse integration are also provided)
- HP’s clarity of direction and management change creates unclear investment directions

IBM

IBM is one of a few vendors with credible offerings in almost all the subcategories of ALM — requirements, software change and configuration, quality, build and distribution domains — while also offering a wealth of methodology content and workflow support. IBM Rational is the largest vendor in the market by installed base and ALM revenue. At its core, IBM’s Rational unit has crafted management and delivery tools that enable distributed teams to be more integrated, collaborative and optimized. Users of the newer Collaborative Lifecycle Management (CLM) suite of products (Rational Team Concert, Rational Quality Manager and Rational Requirements Manager) gain over the traditional Rational suite a cohesive set of tools and installation based on a common platform.

IBM Rational structures its solutions for three distinct customer domains: IT, including independent software vendors (ISVs) and SIs; systems (complex and embedded); and enterprise modernization (host systems). The ALM vision is of a solution that drives innovation across the entire software ecosystem, composed of interdependent purchased, outsourced and in-house-built software tools. It considers ALM to be part of three interrelated enterprise life cycles: the strategic decisions regarding application investment, the development of software based on those decisions and the roll out what has been developed to the intended audience. Users of the older parts of the offering have a more difficult path, but are accommodated in product road maps and integration partnerships.

As IBM continues to incorporate Jazz technologies into the full product line, it will need to continue tightening the messaging around the components of the product lines. Support for OSLC is growing. This enables improved interoperability between the Rational tools and ALM products from other vendors. The breadth of its portfolio enables IBM to play beyond the traditional development life cycle of ALM, and IBM provides one of the few solutions that can reach across diverse platforms.

IBM’s products support:
- Requirements management
- Project management
- Quality management
- Defect management
- Build management
IBM's products have:

- Reporting
- Integration hub

**Strengths**

- Large installed base for requirements management and SCCM
- Thought leadership, including OSLC, Eclipse and Jazz
- Its broad portfolio provides coverage of the widest variety of functionality and platforms
- Ability to scale to the large and complex
- Support for broad set of practices and development life cycles, including agile

**Cautions**

- A complex, overlapping product line
- Lack of stability to product road maps
- Accommodation of the installed base and legacy products slows pace of change and shapes product road maps
- Integration improving, but gaps exist — partners provide additional support
- Complex installations and management

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**Inflectra**

Inflectra's focus in the ALM space has been the delivery of a highly integrated, affordable set of solutions for management of project and program information from department to enterprise levels. Although the core products — SpiraTest and SpiraPlan — are an integrated suite that can be purchased in a bundled form as SpiraTeam, they are designed with an open architecture and can be used in conjunction with other tools that customers already have in place. The tools are available, either as licensed installations or as SaaS.

The tools focus on agile development practices, but have a good combination of traditional task board and project/program management functionality. The company has continued to expand the product line via development with its most recent addition being a test automation product. For an agile focused product, requirements management functionality is relatively rich. Similar to other smaller companies in the ALM space, the overall breadth of solution lacks some elements.

Although a relatively young company (founded five years ago), it has an established global presence with direct and partner presence in all major geographies. The largest customer site for Inflectra is between 200 and 500 seats, and the product supports six languages. Inflectra is an appealing alternative for midsize organizations that need to solve the challenges of agile or geographically distributed development.

Inflectra's products support:

- Requirements management
- Project management
- Quality management
- Defect management
- Task management

Inflectra's products have:

- Reporting
- Integration hub

**Strengths**

- Feature-rich planning and management at a low cost
- A simple product line
- Broad language support

**Cautions**

- Not proved in an extremely large scale
- Not a good fit for process-centric development
- Test management is new and evolving

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**Micro Focus**

Micro Focus has tools to manage the requirements process, software quality and overall change management. Strong integration across the life cycle is provided with a focus on change management and traceability to test assets. The products integrate with common integrated development environments (IDEs) and with other widely adopted life cycle products. The company is beginning to offer products in SaaS format and expects to drive toward this as the norm. Micro Focus has a background in multiplatform and multitechnology solutions, which may align well in a market of diverse devices, tools and development platforms.
When Micro Focus entered the market through the acquisition of Borland and the software quality assets of Compuware, the company's first focus was on software quality. Economic conditions and management turnover hampered execution at first, but they now appear to have reached a turning point, and are rebuilding momentum. It has stabilized its product line and is delivering expanded functionality for other ALM sectors. It has a deep agile culture in its own development shops and good experience in broadly distributed agile development, which has not yet been fully reflected in its tools. Despite this potential to expand in the agile space, we expect most growth to be in existing accounts. The Borland products are well-positioned to provide safe transition paths for large waterfall teams to more-agile practices.

The steady improvement in product delivery is being reflected in improved revenue across the product lines. The testing assets portion of the business was assessed in the Leaders quadrant last year. The company needs to expand its planning portfolio and build, buy or partner in the build and release management space. The company has several large installations, and its largest site (45,000 seats) is third only to HP and CollabNet.

Micro Focus believes the rise of enterprise agile will increase the need for enterprise visibility across multiple repositories, multiple methodologies and global teams. As this occurs, the shift in ALM will be from control to visibility and transparency, while providing required governance, compliance and audit support. Analytics and interactive infographics, combined with greater levels of traceability across disparate systems, will take center stage — bringing management insight for greater predictability in software delivery.

Micro Focus's products support:

- Quality management
- Requirements management
- Requirements definition and prototyping
- SCCM
- Defect management
- Task management

Micro Focus's products have:

- Reporting
- Integration hub

Strengths

- Quality management tools
- Requirements
- Global presence and implementation partners

Cautions

- Uneven execution
- Products are aging — must deliver strong updates and road maps
- Lack of synergy between the Borland business unit and Micro Focus

Microsoft

Microsoft's product goal is an accessible toolset that enables empirical process control and fluid project management based on inspect and adapt. To support this, products have to deliver on three fundamental principles:

- Flow of value — value is defined by the customer that is paying for or using the project
- Continual reduction in the waste impeding flow
- Transparency — enabling team members to continually improve

By virtue of its position in the market as a provider of key platforms and development tools, Microsoft acts as an overall thought leader in the ALM market. However, this breadth and a late start in the ALM market have caused its tools often to lag other products, although it is now introducing innovations. At this point, other than IBM, Microsoft offers the broadest set of ALM functionality in the market. The company tends to deliver new releases every 18 months, but generally needs to coordinate with key platform updates and initiatives. To make up for long development cycles, the product team uses the Microsoft Developer Network (MSDN) to deliver "Power Tools" and other early access software bits.

Microsoft has a broad customer base going from small or midsize businesses (SMBs) up to extremely large enterprises, and its largest sites have more than 10,000 users. Unlike all of the other tools in this Magic Quadrant, Microsoft's is the only one that tightly binds its versioning system to the rest of the ALM planning tool. The single product platform delivery may create functional overlaps with other tools already in your portfolio. Microsoft supports the Visual Studio product line in 13 languages (the second highest of the tools in this Magic Quadrant) and is pushing into cloud deployment for its Team Foundation Server (TFS).

Although Microsoft is one of the only vendors to cover all aspects of the SDLC, its greatest challenge has been support for non-Microsoft development. However, the company has made good strides with support for Eclipse and the ability to extend TFS with Java code. The greatest challenge comes in how to stitch together a mixed environment with developers on non-Microsoft platforms that may have a stack that includes other SCCMs and the steps required to weave this together. TFS is a strong system; however, if your organization doesn't use .NET or other Microsoft technologies, then this will not be your ALM product of choice. As deployment platforms shift to the cloud, this isn't just a Java and .NET issue, and Microsoft will need to continue to...
demonstrating a long-term commitment to support diverse platform user needs.

Microsoft’s products support:
- Requirements management
- Project management
- Quality management
- Defect management
- Build management
- Release management
- Lab management
- Change management
- Task management
- Modeling

Microsoft’s products have:
- Reporting
- Integration hub

Strengths
- Partner providers
- Developer network
- Price
- Support for Office, SharePoint and Project

Cautions
- Challenging to use when integrated with other SCCM systems
- The on-premises version requires too much support for smaller shops

Parasoft has had a strong role in the developer market for several years, with a focus on driving productivity through effective software quality practices. With the delivery of Concerto, the company moved into the full ALM market with a tool that builds on the philosophy of automated defect prevention or a quality-focused development process. The product has support for agile, as well as regulated processes and is one of the few with integrated process support for FDA and other safety-critical developments. Parasoft is one of the few vendors in this Magic Quadrant that provides support for development and test environment management, enabling labs to be defined and provisioned in a self-service format. Concerto scale has been demonstrated in installations of more than 3,000 seats. Parasoft has broad channel support with a global presence and partners to aid in sales, support and training. The product is available in three languages.

Parasoft’s consistent focus on developer productivity and policy-driven project management positions the product well for those dealing with variant complexity and regulated process. For instance, policies can be defined to represent management’s expectations about how a requirement is delivered. The company itself is a case study in developer productivity and has helped many others achieve strong productivity boosts. This is documented in the book “Automated Defect Prevention” (Dorota Huizinga and Adam Kolawa, John Wiley and Sons, 2007). Policies can define quality practices, such as peer code review or unit testing and could define methodologies such as test-driven development. Policies can also define human policies that are delineated by profile or tenure. This can be particularly important in broadly distributed teams or for teams that use contract or outsourced development resources. Mandated processes (manual and automated) are continuously monitored for policy compliance. Notifications are generated when actions don’t align with policy expectations. These features position the product well for the core markets of embedded systems and regulated devices.

The company has transitioned well after the loss of its co-founder, Adam Kolawa, in April 2012. Its corporate culture shows in the intrinsic values embodied in the product line. The company has been shifting its pricing model to be more subscription-centered, and it has been increasing the number of strategic partners in key markets.

Parasoft’s products support:
- Requirements management
- Project management
- Task management
- Quality management
- Lab management

Parasoft’s products have:
- Reporting
- Integration hub

Strengths
- Support for regulated processes
- Lab management
Polarion Software

Polarion Software is a German-based ALM vendor with a single integrated ALM platform that supports highly collaborative team development with both agile and traditional approaches. Although there is a trade-off in the support for agile (e.g., no ability to replicate "Post-It notes on a whiteboard" style of planning), it is one of the better mixed-mode tools, and it is well-suited for teams using hybrid approaches. The tools are browser-based and are designed to support globally distributed teams with users from multiple roles. This includes round-trip support for Microsoft Word in requirements management by offline users, as well as having specific products for requirements and discussion.

Polarion is often initially selected for requirements management, particularly in product-oriented companies. Users of the requirements capabilities then adopt the broader ALM offerings. The company provides an extension API and has more than 100 extensions available. The philosophy of the tool is to be connecting, easy and adaptive. As the product set moves forward, Polarion will offer SaaS delivery, as well as its traditional on-premises system, and will continue to broaden support across the product life cycle. Its environments will have to increasingly support open-source elements. The product is updated on an annual schedule.

The company has a smaller direct presence, but is supported globally via partners. We find that the greatest market strength is in the European markets, with slow steady growth in other geographies. The product is localizable, but ships in English with Chinese and French in beta. Integrations into Eclipse and Visual Studio are provided. The largest installations of the product support 3,000 users.

The company's philosophy and vision for ALM is based on tools providing a foundation for increasing quality and reliability, while supporting shorter, more dynamic cycles. The goal is to provide integration to wide set of tools, support for a variety of development methods, and a single integrated repository.

Polarion's products support:
- Requirements management
- Project management
- Quality management
- Defect management
- Build management
- Release management
- Task management
- SCCM

Polarion's products have:
- Reporting
- Integration hub

Strengths
- Support for agile and traditional project management
- Support for mandated process compliance
- Perpetual and term license models
- Broad life cycle coverage in a single integrated platform
- A European presence

Cautions
- Polarion's presence outside Europe needs additional development
ecosystem. The product supports both English and Japanese.

Directionally, the company will align best for users that have a strong product focus, where software is only part of the delivered value. The growth in the number of lines of code in equipment and in the number of devices will result in an increasing pace of change that must be dealt with, often across complex landscapes. This amplifies the need for the support of agile and traditional methods, as well as collaboration among teams.

PTC-MKS's products support:
- Requirements management
- Project management
- Quality management
- Defect management
- Release management
- Task management
- SCCM

PTC-MKS's products have:
- Integration hub
- Reporting

Strengths
- Support for compliance
- Support for distributed teams
- Support for variant complexity
- Strong requirements and change management support
- A single, unified platform

Cautions
- There is no SaaS model

Rally Software

Rally Software is deeply involved in agile, including how the product is delivered. Because the primary delivery vehicle for Rally is ALM PaaS, the company uses agile planning and delivery to constantly update and improve the product. This experience aids it in enabling and training its customers in the use of ALM to align daily work and strategies, enabling the delivery of small batches of software at a rapid pace. This rapid pace involves releasing updates every Saturday.

In addition, the extensibility of the tool has resulted in a broad set of user contributions. At core in the toolset is a drive to connect product teams to their customers. This connection plays out at Rally via a team dedicated to customer requests. The combination of culture, SaaS and platform position Rally strongly. The solution has been demonstrated in customer installations as large as 5,000 users.

The product is only available in English; however, it is sold and supported globally, both directly and through a partner network. Although the products have strong support for agile processes, support for more traditional processes is marginal, relying on kanban boards to represent things such as waterfall phases. Rally's strategy is to focus on the parts of the application life cycle disrupted by agile practices. Rally has robust capabilities for team collaboration; planning and tracking releases and iterations; and managing requirements, tasks, tests and defects, and test cases. Recently added offerings in idea management, agile portfolio management, quality management and updated analytics keep the company moving on a solid innovation path.

Like other agile providers, Rally recognizes that agile is a disruptive change to development. Thus, it supports the product with a broad set of training and consulting services. Because the solution is primarily delivered in a SaaS offering, it provides a rich set of feedback from users about usability issues and the value of collaborative support. The product has a strong set of capabilities for customization and integration.

Rally's products support:
- Requirements management
- Project management
- Quality management
- Defect management
- Build management
- Release management
- Task management
- SCCM

Rally's products have:
- Reporting
- Integration hub

Strengths
- An agile leadership position
- Strong product management
Rocket Software

Rocket Software (formerly Aldon) has as its driving vision for ALM the support of entrepreneurial IT organizations that are dedicated to providing their customers — business end users — with high-value, high-quality solutions rapidly and predictably. Rocket acquired Aldon (which had been in business independently for more than 32 years) in March 2012 to create a new division. The Rocket-Aldon product has a solid customer base, with 900 users at its largest site. Its products are available in two languages.

The toolset is aimed at enabling strong processes and creating effective communication between business and IT. This means the product line looks from demand through delivery and looks to deliver consistent process management. Organizations can define the business processes they want to automate, who they want involved in the process and what the workflow should be. Rocket Software is focused on enhancing deployment functions, increasing connectivity to other development tools, expanding agile management solutions and extending the Web 2.0 and mobile interfaces.

A key element of the company’s product story is the Rocket Aldon Community Manager, which provides a central repository for all information regarding change requests, from the time a need arises until a solution has been delivered and its efficacy has been verified. It is well-situated for teams with a mixture of structured and agile processes that don’t expect a future move to a pure agile approach. In addition, the Rocket Aldon products are good solutions for companies that have mixed technology platforms, including iSeries, and with the combination of other Rocket products, the company has a solid platform for legacy modernization projects.

The Rocket Aldon products support:

- Requirements management
- Project management
- Defect management
- Build management
- Release management
- Lab management
- Task management
- SCCM

Rocket-Aldon’s products have:

- Reporting
- Integration hub

Strengths

- Platform and process support
- Legacy migration
- Integration with service desk tools
- Strong distribution functionality

Cautions

- Only available in a traditional license model
- Agile process support is weak
- Support for integration mechanisms is narrow

Serena Software

Serena Software has a broad set of tools for both development and service management, and has tools to support both distributed and mainframe development. The company began a makeover a couple years ago with the introduction of a new management team and has cleaned up the product portfolio, introducing substantial product innovation and building a more consistent financial performance. Serena takes a wide-range approach to ALM, building around a suite of products that cover demand generation out to release to production. A core element of its strategy is the ability to support a wide set of tools and processes and to provide integration and orchestration of the tools and processes.

The company uses Serena Business Manager (SBM) as a hub to connect its products and to define workflows, reports and data integration. It provides templates that can be used as starting points. Because most organizations already have tools from many vendors, this product is a good reason to look at Serena. In addition, the company has solid entries in requirements, agile planning, and SCCM.

The company is one of the few in the ALM space to extend to service management and release management, enabling a more true ALM experience, rather than the isolated application development life cycle most vendors provide. The company has solid support for agile and lean processes. Serena’s products and organization are mature with global direct and partner sales.
as well as global support and training around world. The products are localized for 11 different languages, and both browser and native clients (including Eclipse and Visual Studio) are provided, as well as support for offline use for many tasks.

Serena will continue to focus and expand on driving the entire end-to-end application delivery process and seek ways to enable users to effectively apply lean best practices to drive out waste. The company also expects to continue to live in a heterogeneous environment, with a proliferation of tools, methodologies, form factors and platforms, including open-source, mobile and cloud. In this respect, a key element of differentiation for Serena is its strength in release management. Whereas many tools support software change and release definition, Serena has a broad set of tools that cross over to the operational release management arena, giving it the most complete DevOps story of any provider in this Magic Quadrant.

Serena’s products support:

- Requirements management
- Requirements definition (models, prototypes and use cases)
- Project management
- Quality management
- Defect management
- Build management
- Release management
- Task management
- SCCM

Serena’s products have:

- Reporting
- Integration hub

**Strengths**

- Integration between ALM and release
- Broad coverage of the SDLC
- Orchestration message
- Serena SBM provides flexibility in integrating solutions and defining workflows
- Requirements definition and prototyping
- Support for regulated processes
- Next to IBM and Microsoft, it provides the broadest set of tools across the life cycle

**Cautions**

- Overall market strategy is still maturing after management changes
- Separate agile and structured planning tools

**TechExcel**

TechExcel provides a suite of tools that can be customized to adapt to any process, including agile, structured or mixed models. This is accomplished by providing agile features, such as time-boxed iterations, burn-downs and velocity reports as building blocks that can be used in conjunction with traditional project management via a Gantt chart. The product provides support for both kanban and team boards, and recently added support for multisite development. Thus, the product is best for organizations that are primarily focused on more-structured development or wanting to move to a more robust Scrum management and reporting tool than Microsoft Excel. The tools have strong change tracking and full traceability support through the entire life cycle of a developed requirement.

TechExcel is also unique in being one of the few vendors to have ALM and ITSM products that provide integration over the broader life cycle of an application. TechExcel has direct support for global sales, training and support, but does not have partners for any of these tasks. The product is available in three languages. The company’s focus is on delivering a single vendor solution, and support for integration into other products is limited.

TechExcel believes that the following areas are the most likely to see the high growth and maturation during the next few years:

- Expanded level of integration and traceability into operations
- Suites will become more of the standard for mature development teams
- Tools will need to be optimized to support globally distributed teams
- ALM platforms must become more flexible and customizable to adapt to the evolution of development methodologies
- Enhanced traceability will become more of a need

TechExcel’s products support:

- Requirements management
- Project management
- Quality management
- Defect management
- Build management
- Release planning
TechExcel’s products have:
- Reporting
- Integration hub

**Strengths**
- Integration between ITSM and ALM
- Project planning
- Support for agile or traditional methods

**Cautions**
- Limited set of product integrations

**ThoughtWorks**
ThoughtWorks builds innovative products that have enabled behavior-changing practices. The company often runs ahead of the mainstream at times, and its products do not have the same polish of install and onboarding experience provided by the other products in this category. The company’s Twist product is the only commercial testing tool oriented toward agile testing. Mingle is the most mainstream of ThoughtWorks’ product line. It has market-leading collaboration facilities, with an agile focus. Overall, the ThoughtWorks agile suite is aimed at enabling five best practices:

- Evolve process definition
- Embrace heterogeneity
- Orchestrate, rather than manage
- Practice continuous delivery
- Build the right thing

ThoughtWorks’ ALM tools are well-integrated, and Tasktop-provided connectors support integration with a broad set of other products. Although the company has good global coverage, it lacks partners for sales, support and training. The products are available only in English, with the largest installation being 2,500 users. Mingle provides process flexibility, but it is best-suited to teams focused on agile transformation. The tools are designed for companies that recognize that software is strategic to the organization.

ThoughtWorks’ products support:
- Requirements management
- Project management
- Quality management
- Defect management
- Build management
- Task management

ThoughtWorks’ products have:
- Reporting
- Integration hub

**Strengths**
- Experience of the consulting team in agile projects
- Collaboration support
- Traceability
- Support for leading agile practices
- Training and coaching — agile transformation

**Cautions**
- Not appropriate for teams using nonagile processes
- Thin partner network

**VersionOne**
VersionOne is one of the original commercial agile tools vendors. It has led the market with a number of innovations, and now has several large customer installations (approximately 3,000 seats) and a global presence. The company delivers tools that provide tightly integrated processes designed to guide and manage the entire software development value chain from idea to delivery. This includes support for product planning. The company has also extended its support for kanban and lean planning via a reseller relation with LeanKit Kanban. The goal is to enable a change-friendly development approach that enables teams to adapt to rapidly changing business priorities and plans.

Key concepts include collaboration to unify all activities, capturing and disseminating context, supporting rapid decision making and enabling distributed team communication. VersionOne values simplicity over complexity. It has broad support for aiding organizations in the adaptation
of its tools and agile processes that extends beyond its tools to include e-learning, mini-conferences and the AgileSherpa community portal. However, the tools are less-suited to organizations that are required to adhere to structured waterfall-style processes. As with most agile-oriented ALM products, the focus is on delivering a single, centralized source of truth for the organization, which includes a project planning and execution hub that coordinates work for multiple (sometimes distributed) development teams.

Expect to see VersionOne's products continue to build out broader coverage of the application life cycle, as well as enable social-media-style collaboration (the company delivered its Conversations platform in 2010), crowdsourcing and self-service models to improve engagement in the overall process. The product has recently been extended to support agile portfolio management, as part of its growth to support enterprise agile initiatives and build on idea management and road-mapping facilities.

VersionOne's products support:

- Requirements management
- Project management
- Quality management
- Defect management
- Task management
- Collaboration
- Product planning

VersionOne's products have:

- Reporting
- Integration hub
- Open-source Web services

**Strengths**

- Flexible licensing and availability as SaaS or on-premises
- Broad set of prebuilt integrations
- Training and agile transition support
- Support for kanban and lean

**Cautions**

- Limited, but growing technology partnerships
- Support for nonagile processes is limited

**Vendors Added or 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 will change over time. A vendor appearing 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. This may be a reflection of a change in the market and, therefore, changed evaluation criteria, or a change of focus by a vendor.

**Added**

Inflectra was added as a new vendor that completed its offering in the ALM market with the addition of Test Management.

Rocket Software acquired Aldon, and now manufactures the Rocket Aldon product.

PTC acquired MKS, which we are referring to here as PTC-MKS.

**Dropped**

AccuRev, Digite, Kovair, Seapine Software and SmartBear Software were not included in the Magic Quadrant, because it must focus on fewer vendors than a MarketScope. These vendors, previously included in a MarketScope, were not included, because they fell below the revenue and installed base threshold criteria. Kovair and Digite have several large installations at SI companies, demonstrating their products' abilities to scale and to integrate with widely varying toolsets. Clients looking to support large numbers of geographically separated developers should include these vendors in their evaluations.

AccuRev likewise falls below the revenue criteria. AccuRev's core version and configuration offering is often encountered as an underpinning of successful best-of-breed ALM solutions. Its administrative overhead, innovative functionality (including its stream-based model and built-in, issue-based change package development), ease of use and price make it a sound alternative to other version control solutions. Seapine targets midsize companies in quality-critical industries and promotes a single-vendor solution. SmartBear, another vendor targeting SMBs, is growing rapidly.

Aldon was acquired by Rocket Software, and is now listed under Rocket.

MKS was acquired by PTC.
Inclusion and Exclusion Criteria

To be included in this Magic Quadrant as an ALM tool, offerings must:

- Have at least $10 million in ALM revenue
- Have at least 600 customer installations
- Support the following management domains:
  - Requirements management — the ability to define requirements, manage changes and trace dependencies
  - Quality management — the ability to define test cases and manage defects
  - Project planning and management — the ability to define and assign work items and track and report on status
- Facilitate distributed team activities
- Manage change process workflows from initial change requests or requirements through build and turnover for release
- Support federated sharing or central storage of metadata for the development resources and processes
- Support custom reporting and custom integrations beyond those of the vendor
- Be generally available
- Have at least three reference clients in production
- Be distributed in multiple national markets
- Make commercial support available

The integration of ALM products with project and application portfolio management tools is useful, but, as of yet, is not a core selection criteria. Similarly, integration with software distribution facilities or other operational tools is not yet heavily weighted. Some project management tasks can be done with ALM tools. These functions will not necessarily do what a project management tool will do, but will target the needs of some subset of method and project size. Another interesting integration for demand management would be in the form of connecting to a help desk/service desk (e.g., BMC Remedy), because change tickets are often the initiator of a project.

We have excluded ALM offerings that are package-focused. Specialized ALM facilities, emerging for major ERP environments, such as those of SAP and Oracle, need to be considered separately. SAP clients should explore SAP ALM and offerings from companies such as RealTech, Revelation Software Concepts, Panaya or IntelliCorp, as well as the use of SAP Solution Manager. Oracle users can explore companies such as Quest Software, Unitask and Phire. No single offering is capable of addressing ALM needs in both custom-developed and packaged environments at this time.

We also excluded offerings that required a significant amount of custom programming services to complete. A number of products have some ALM capabilities, but failed to meet one or more of the above criteria, so they were excluded.

Section 508 Compliance

Tools in the ALM space are mixed in their support for Section 508. This is especially true for browser-based tools, which find challenges in the facilities exposed by various browsers and rich-client browser toolkits. In addition, as tools enable visual and drag-and-drop-oriented facilities, such as task boards, the ability to use screen readers and provide compelling interaction models becomes problematic. For entities that require Section 508 compliance, or are seeking tools that support accessibility, the best support is currently offered by Kovair, Microsoft, Parasoft and Polarion. Partial support is provided by Aldon, Digite, Inflectra and Serena.

Evaluation Criteria

Ability to Execute

The key to execution at this point centers on the ability of companies to identify user needs and turn them into delivered products at a price to value. Pricing and perceived value have been shown to be critical in feedback from user surveys, as well as in a growing number of calls on lower-cost alternatives, open source, SaaS and tools that are more intuitive. This is driving customer experiences, as is the last of the high weight criteria — the influx of social media, which has changed both the context of the customer connection, as well as the speed and ferocity of user feedback. This also relates to marketing execution, in which the ability to create your image and brand has become less important than delivering a product, a clear direction and user value.

Most users have a wide variety of products on-premises (including tools for both custom and package development), which means key execution points are partners and support for integration standards.

<table>
<thead>
<tr>
<th>Table 1. Ability to Execute Evaluation Criteria</th>
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<tbody>
<tr>
<td>Evaluation Criteria</td>
</tr>
<tr>
<td>Product/Service</td>
</tr>
<tr>
<td>Overall Viability (Business Unit, Financial, Strategy, Organization)</td>
</tr>
<tr>
<td>Sales Execution/Pricing</td>
</tr>
<tr>
<td>Market Responsiveness and Track Record</td>
</tr>
</tbody>
</table>
Completeness of Vision

The key areas of completeness are the ability to understand the market from two perspectives:

- **Market Understanding**: Most vendors won’t be supplying the only ALM tool in use, so they must have an integration strategy.
- **Marketing Strategy**: Providing a full set of capability to manage or govern the activities of defining, developing, accepting and delivering solutions.
- **Sales Strategy**: A company without an understanding of market trends in practices and the evolution of delivery platforms will slowly find itself pushed into a corner. Once a company has a solid understanding, the ability to innovate (which creates differentiation) in technology, as well as offer strategy, is critical. Our client and user surveys demonstrate a desire for greater visibility of product directions, more frequent and consistent delivery of new features (maintaining compatibility), and a need for leadership and practices, not just tools that will help enterprises transform themselves.
- **Offering (Product) Strategy**: It is still important to have traditional elements, such as marketing, sales and a business model, but these are the minimum. Geographic strategies are less important or may be changed into what is important. In many instances, it is less important that a company have a local presence; however, a company must have the ability to connect globally via social media, staff augmentation partners, local champions and quality support. The support doesn’t have to be in the same location, but it needs to be direct and correct. The value comes from a strong indirect channel.
- **Business Model**: With the large number of vendors participating in ALM (we are only mapping a subsegment of the market), vertical or industry strategy is less important as a completeness perspective. However, it will become more of a differentiation strategy for vendors that end up servicing well-defined market segments, rather than trying to battle in the overcrowded general market. Good examples of this are tools focused on product-centric development teams. These teams tend to have needs for mixed project styles, as well as variant complexity or regulatory needs that must be met.
- **Vertical/Industry Strategy**: It is still important to have traditional elements, such as marketing, sales and a business model, but these are the minimum. Geographic strategies are less important or may be changed into what is important. In many instances, it is less important that a company have a local presence; however, a company must have the ability to connect globally via social media, staff augmentation partners, local champions and quality support. The support doesn’t have to be in the same location, but it needs to be direct and correct. The value comes from a strong indirect channel.
- **Innovation**: With the large number of vendors participating in ALM (we are only mapping a subsegment of the market), vertical or industry strategy is less important as a completeness perspective. However, it will become more of a differentiation strategy for vendors that end up servicing well-defined market segments, rather than trying to battle in the overcrowded general market. Good examples of this are tools focused on product-centric development teams. These teams tend to have needs for mixed project styles, as well as variant complexity or regulatory needs that must be met.
- **Geographic Strategy**: It is still important to have traditional elements, such as marketing, sales and a business model, but these are the minimum. Geographic strategies are less important or may be changed into what is important. In many instances, it is less important that a company have a local presence; however, a company must have the ability to connect globally via social media, staff augmentation partners, local champions and quality support. The support doesn’t have to be in the same location, but it needs to be direct and correct. The value comes from a strong indirect channel.

### Table 2. Completeness of Vision Evaluation Criteria

<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>Standard</td>
</tr>
<tr>
<td>Sales Strategy</td>
<td>Standard</td>
</tr>
<tr>
<td>Offering (Product) Strategy</td>
<td>High</td>
</tr>
<tr>
<td>Business Model</td>
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<tr>
<td>Vertical/Industry Strategy</td>
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<tr>
<td>Innovation</td>
<td>High</td>
</tr>
<tr>
<td>Geographic Strategy</td>
<td>Low</td>
</tr>
</tbody>
</table>

Source: Gartner (June 2012)

Quadrant Descriptions

**Leaders**

Atlassian, CollabNet, IBM, Microsoft and Rally Software have strengths in market recognition, product innovation, partner networks and global presence. IBM, CollabNet and Microsoft represent more traditional players with broad ALM platforms (especially IBM), whereas Atlassian and Rally Software are newer companies that have grown from disruptive innovation to take strong positions via market adoption.

**Challengers**

HP has been in the market a long time as a leader in software quality, and, during the past few years, it has worked to extend itself into the rest of ALM. The company has a strong market presence that will make it a Challenger, especially to IBM or Microsoft; however, it does not have the disruptive innovation of either the Visionaries or Atlassian and Rally Software.

**Visionaries**

Parasoft, Polarion, PTC-MKS, Serena, ThoughtWorks and VersionOne deliver innovative ideas that will lead them, through execution, into a Leader position through gain in customers, global presence and functional breadth, or toward a Niche Player’s role, servicing specific market sectors (e.g., pure-play agile, product-centric or regulated processes). Most of these companies will face acquisition or move to servicing specific niche segments.
Niche Players
Rocket Software, Inflectra, Miro Focus and TechExcel lack global market exposure or presence outside of specific market sectors. Each offers solid products from a technical perspective, but it is important to assess the fit of their strategic directions and geographic support.

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Context
This is an update of the “MarketScope for Application Life Cycle Management” and represents a further maturing of the ALM market. The current focus of ALM is the SDLC, but we are beginning to see a move toward true ALM — i.e., managing applications from demand through delivery, operations, updates and retirement. During the year, you will see our terminology evolve to better address the role of these tools in the governance of solution delivery. This research is focused on vendors supporting custom application development.

Organizations are under pressure to accelerate the speed of delivery of increasingly complex applications, while improving overall productivity and quality. Organizations are adding packages, business process management suites, externally provided services and other new delivery vehicles to the range of options. These applications are being combined with legacy technologies, often built by virtual teams spread around the globe. Audit and oversight demands continue to grow in both regulated and unregulated environments. The need for greater governance often adversely affects productivity. Efficient coordination and automation of the delivery process requires new, collaborative approaches to the planning, measurement, execution, control and reporting of activities. These new approaches are what differentiate current ALM tools, and what make ALM processes vital to leading-edge development activities.

ALM suites have promised improved automation and integrated approaches to the delivery of applications, but they have often fallen short of the vision. Although users are seeking ways to coordinate work and share data across phases and activities — which include requirements definition and management, different testing activities (including test case management), software changes and configuration management — they often have process enactment tools for the various major activities that don’t require a rip-and-replace approach. Clients are resisting the tendency to apply the ALM term broadly to include functions focused on project execution, recognizing that the suites of applications during the past 10 years have fallen short in their ability to maintain consistent and complete views across many process steps.

Depending on their philosophy of ALM, vendors are taking differing approaches; however, many have shifted toward a federated repository approach. This allows specific implementation tools (e.g., bug trackers, modeling tools, etc.) to share information about artifacts. This workflow system describes the (sometimes quite messy) sequence of activities required to design, develop and deploy the artifact, and a data warehouse enables the capture of information about practices, so that they can be repeated. Although ALM includes the management of specific phases — e.g., requirements, design and tests — the extension of unified workflow and management across these phases is the key element of ALM. The emergence of service-oriented architectures (SOAs) is enabling this evolution through the use of XML, REST and RSS.

Benefits — What Do You Get From ALM Implementations?
Three principal values can be expected from ALM adoption:

- **Enhanced management transparency and visibility:** This entails common metadata and workflow models that enable the functions of planning, measurement, control and reporting to be performed easily across the many phases, activities and roles within the process of development.

- **Effective execution of challenging processes:** Application organizations find new challenges in many directions. Teams are often geographically distributed. They may span multiple enterprises, and include vendors, partners and clients. The lifecycle across projects may need to be mastered will vary across projects, but several different cycles may need to come together to support multilayer or multienterprise needs. Delivery mechanisms are increasingly heterogeneous. SOAs, Web architectures, SaaS and cloud platforms offer new variations of process architecture and tools that will need to be mastered.

Despite all these new constraints and complications, the business needs the results more quickly and with better quality. These benefits result in better control of costs and risks in development projects across the spectrum of applications. Savings also stem from the reduction of unnecessary rework and better alignment of projects with business needs. The understanding created by ALM improves the interactions with project and operational teams, and accelerates emerging integrations with these domains.

- **Better results for the business:** The business needs consistent and predictable delivery. This is not just meeting schedules and budgets. This is meeting the real needs of the users, even those needs that have been uncovered during development and delivery, and meeting those needs with acceptable adherence to deadlines and budgets.

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Market Overview
Although support for agile is important, ALM products that can’t accommodate a variety of methods, processes or project styles are unlikely to find broad long-term acceptance in large enterprises. The challenge is that the tools that work best for agile lack requirements definition and management (beyond user stories), and they lack support for managing nonagile project elements.

At the same time, more-traditional tools have all evolved agile support, but are often lacking in ease of use and provide a poor user experience, compared with the agile-focused tool. This will improve, and we are seeing early evidence of this — notably in the Hansoft platform. We expect
to find aspects of agile practices and waterfall methodology, as well as other styles, accommodated by most products during the next two years.

Most projects will have elements that are appropriate for agile and other elements that occur in a more structured format. We see this most prominently in areas such as embedded system development, where software may be agile, but the iterations must be matched against hardware deliveries that happen on a separate and more traditional delivery schedule. This also happens frequently in game software development, where coordination occurs between code, art and other media. We believe this is part of what truly defines enterprise agile, and it is also another of the key adoption drivers for ALM.

Developers of complex products (e.g., embedded systems in the appliance, automotive or aerospace industries) must deal with management of complex requirements and complex variants in product configuration and deployment. A common software framework may be supporting many devices, and the development team must manage the unfolding complexity of the evolving hardware. There may be large-scale projects, integrating hundreds of elements, and the collation and management of the parallel streams of development become critical, due to the sheer volume of items on the one hand, and the costs or consequences of errors on the other. The burden of variant complexity is such that this segment can find value in driving its teams to use a common set of tools and processes, rather than permitting the variety more common to commercial IT.

Geographically distributed development requires complex communication of the project’s progress from location to location, and the management of distributed contributions to a common core of code. In particularly challenging cases, complexity is geographically introduced by the complexity of multiple target platforms, and ALM’s abilities become even more vital. ALM delivers value in any place where improved collaboration is needed. Well-implemented ALM enables agile processes to be used among geographically separated teams. Any latency between when a change occurs and when the team as a whole has the new information reduces development effectiveness, slowing activity and, at worst, requiring reducing quality or requiring rework.

Process-centric shops are another beneficiary of the workflow and process discipline in ALM offerings. These may be technical development shops, particularly those involved with the development of software with critical performance requirements (e.g., flight safety demands). They also may be in regulated industries, such as pharmaceuticals, where statutory requirements for processes justify the investment in ALM.

**Trends: Three to Five Years**

Expect market consolidation and acquisitions.

The split will continue in commercial, off-the-shelf versus custom development ALM.

Continued expansion will occur from SDLC to full application life cycle.

**Market Consolidation**

This Magic Quadrant covers only a small set of the vendors in the overall ALM market. New vendors enter the market with regularity through acquisition or by creating new point-specific tools, as new areas or methods arise. However, there are too many discrete vendors and few that can drive long-term directions. This will force vendors into supporting specific market niches, such as small/midsize, package solutions, legacy renewal or embedded applications. We also expect that the move toward cloud-based tools with RESTful interfaces will continue to enable and enhance the user behavior of having tools from multiple vendors.

The ever-changing nature of development (including changing languages, platforms and supporting tools) drives a market that supports choice in tools. Part of this will be the evolution of what ALM is. "ALM" is a term focused on the SDLC, rather than the application life cycle from inception through retirement. In particular, the emergence of DevOps as a primary driver will push further the connection between traditional ALM and ITSM. This will continue to be a driver of acquisitions in the market space.

**DevOps**

DevOps is the confluence between development, build and release and IT operations release planning and management. In current form, this is often described as a toolchain. Although focused initially on tools directly related to the development process (IDEs, compilers, debuggers, etc.), toolchains have been extended beyond the developer's desktop to support the needs of collaborative product development efforts, including testing and staging, for example. Applications that might be found in this extended toolchain include requirements management tools, source code management and version control systems, build management tools, bug-tracking applications and package management systems.

**Integration Technologies**

One of the key challenges in the ALM market is fitting in with the products already in place in an organization. Elements of the ALM product stack are often acquired independently by the key teams (e.g., business analysts/requirements management, quality management/team, agile planning/developers). In the past, many companies tried to deliver single integrated toolsets and offered some form of API to integrate with other products. Although some of this continues, product companies are generally recognizing the mixed sets of tools their users have, and many are improving integration support shifting to RESTful interfaces and often using third-party integration technologies (Tasktop, OpsHub, etc.). IBM has also taken the lead on driving an effort to define standard services and data models with its OSLC initiative. OSLC is growing in the number of supporting vendors and includes the Erasmos Lyo project, which provides APIs in Eclipse for creating OSLC-compliant tools. All specifications are covered under a Creative Commons license.

**Delivery Platform**

Many ALM tools now have SaaS delivery models, and some are growing to be ALM PaaS providers. Although this eases the barriers to becoming up and running, companies will face several trade-offs. One of these is lack of support in most of the browser-based tools for Section 508.
compliance. This is a combination of needed work by the vendors, as well as inconsistency in support for accessibility standards in browsers and browser widget sets. The performance of applications running in browsers, as well as the ability to work offline may be factors in your tool choice.