

Vendor Landscape: Application Lifecycle Management

Manage the complexity of today's highly distributed apps and frequent deployment cycles.

Introduction

As development lifecycles get shorter and complexity increases, Application Lifecycle Management (ALM) tools provide transparency and automation in a process agnostic context.

This Research Is Designed For:

- ✓ IT leaders within entry-level to mid-sized enterprise organizations seeking a comprehensive ALM solution.

This Research Will Help You:

- ✓ Align vendor strengths and limitations to your current and projected ALM needs.
- ✓ Determine which suite of ALM tools is best-suited given particular scenarios.
- ✓ Understand available functionality of current ALM solutions.
- ✓ Select the vendor that is the best fit for your organization.

Executive summary

Info-Tech evaluated 14 competitors in the ALM market, including the following notable performers:

Champions:

- **Serena** has distinguished itself as a leader of ALM innovation.
- **IBM** continues to come out strong with the largest product offering geared at the ALM market.
- **Microsoft** is an established player in the ALM marketplace.
- **HP** has proven itself time and time again with its extensive experience in the ALM market.
- **VersionOne** brings innovative strides in business collaboration and workflow management throughout the development lifecycle.
- **Borland** continues to offer seamless integration with Borland and third-party offerings in its ALM product suite.

Value Award:

- **Atlassian** delivers unbeatable value with its functional ALM suite.

Trend Setter Award:

- **Rally** provides a highly configurable ALM suite which allows you a high degree of customization.

Info-Tech Insight



- 1. Release management supports concurrent short lifecycles.**
Release management continues to strengthen with the ability to conduct concurrent releases all traced within the pipeline back to requirements.
- 2. Virtual test lab management aims at both convenience and test lifecycle reduction.**
The ability to more closely approximate production environments removes some guesswork in performance gaps. Provisioning separate labs using virtualization and automation speeds up concurrent functional testing.
- 3. Emphasis on policy and compliance.**
Business stakeholders have the ability to assess launch risk based on policy and measured aggregated metrics from all domains within the SDLC. With full stack solutions offering integration with multiple competing solutions, aggregate data points are available to decision makers.

How to use this Vendor Landscape

There are multiple ways you can use this Info-Tech Vendor Landscape in your organization. Choose the option that best fits your needs:

Vendor Landscape



Do-It-Yourself

Use this Vendor Landscape to help you complete your purchasing decision. The slides in this VL will walk you through our recommended evaluated vendors in this market space with supporting tools and deliverables ready for you to make your decision.

Free Guided Implementation



We recommend that you supplement the Vendor Landscape with a **Guided Implementation**.

At no additional cost to you*, our expert analysts will provide telephone assistance to you and your team at key milestones in the decision to review your materials, answer your questions, and explain our methodologies.

*Guided Implementations are included in most advisory membership seats.

Book a free guided implementation today!

Info-Tech is just a phone call away and can assist you with your project. Our expert Analysts can guide you to successful project completion. For most members, this service is available at no additional cost.*

Here's how it works:

1. Enroll in a Guided Implementation for your project

Send an email to GuidedImplementations@InfoTech.com

Or call 1-888-670-8889 and ask for the Guided Implementation Coordinator.

2. Book your analyst meetings

Once you are enrolled in a Guided Implementation, our analysts will reach out to book a series of milestone-related telephone meetings with you and your team.

3. Get advice from a subject matter expert

At each Guided Implementation point, our Consulting Analyst will review your completed deliverables with you, answer any of your questions, and work with you to plan out your next phase.



This symbol signifies when you've reached a Guided Implementation point in your project.

*Guided Implementations are included in most advisory membership seats.

Guided Implementation points in the ALM Vendor Landscape

Book a Guided Implementation Today: Info-Tech is just a phone call away and can assist you with your evaluation. Our expert Analysts can guide you to successful technology selection.

Here are the suggested Guided Implementation points for the ALM Vendor Landscape:

Section 1: Shortlist Assistance and Requirements

Get off to a productive start: Discuss the market space and how vendors are evaluated. Decide on which deployment option suits you best and narrow down the options based on customized requirements.

Section 2: RFP and Budget Review

Interpret and act on RFP results: Review vendors RFPs and ensure the solution is meeting your needs. Discuss average pricing of solutions and what can fit into your budget.

Section 3: Negotiation and Contract Review

Purchase optimization: Review contracts and discuss best practices in negotiation tactics to get the best price for your solution.



This symbol signifies when you've reached a Guided Implementation point in your project.

To enroll, send an email to GuidedImplementations@InfoTech.com or call 1-888-670-8889 and ask for the Guided Implementation Coordinator.

Market overview

How it got here

- Applications are getting more distributed and complexity is increasing.
- Additionally, shorter development lifecycles have been increasing pressure to ensure communication between team members remains strong and deliverables align to business priorities.
- The need to track multiple release schedules and operational changes concurrently requires strong source code management, release scheduling, and data to support risk management.

Where it's going

- With shorter development lifecycles, the ability to automate parts of the SDLC are critical in supporting quality and consistency.
- With many popular open source tools being used as point solutions within the SDLC, we continue to see integration between ALM tools and popular open source tools.
- Deployment options to cloud will continue to increase.
- Business policy and risk management is injected into the software development lifecycle early and carried throughout the lifecycle.

ALM vendor selection / knock-out criteria: market share, mind share, and platform coverage

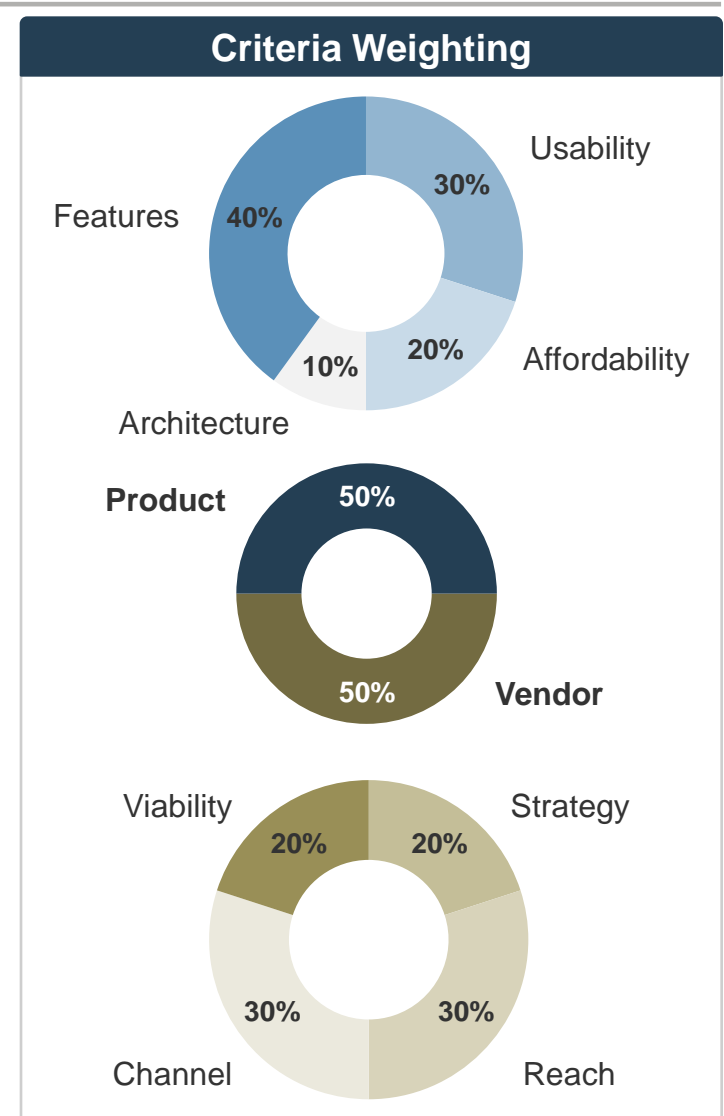
- Growing demand for mobile and cloud development necessitates the ability to manage custom workflows across different development products.
- For this Vendor Landscape, Info-Tech focused on those vendors offering broad capabilities across multiple platforms and selected vendors that have a strong market and/or reputational presence.

Included in this Vendor Landscape:

- **Atlassian.** Integrated set of SaaS tools that range from concept to launch and into customer support.
- **Borland, a Micro Focus company.** Software supply chain thinking to manage a “better together” integrated experience.
- **VersionOne.** Agile ALM platform built from the ground up to support Agile and Lean software development.
- **Serena.** Process-based ALM that integrates with third-party products and services.
- **TechExcel.** Web-based multi-site suite of tools that supports requirements portfolio management to testing.
- **Seapine.** Emphasizes ease of configuration through GUI interfaces.
- **CollabNet.** A pioneer in open source, cloud, and Agile for the enterprise.
- **IBM.** ALM that emphasizes DevOps, continuous engineering, with SaaS delivery.
- **Parasoft.** Emphasizes policy-driven project management to drive application quality.
- **Microsoft.** Collaboration platform supporting Agile across the IT lifecycle.
- **SmarteSoft.** Emphasizes ease of integration with third-party tools across the SDLC.
- **Rally.** Agile-focused vendor with cloud-based platform and Agile training service.
- **ThoughtWorks Studios.** Agile project management, continuous delivery, and automated testing functionality.
- **HP.** Full application lifecycle management from requirements definition to performance testing.

ALM criteria & weighting factors

Product Evaluation Criteria	
Features	The solution provides basic and advanced feature/functionality.
Usability	The end-user and administrative interfaces are intuitive and offer streamlined workflow.
Affordability	Implementing and operating the solution is affordable: absolute cost and licence flexibility.
Architecture	Multiple deployment options and extensive integration capabilities are available.
Vendor Evaluation Criteria	
Viability	Vendor is profitable, knowledgeable, and will be around for the long term.
Strategy	Vendor is committed to the space and has a future product and portfolio roadmap.
Reach	Vendor offers global coverage and is able to sell and provide post-sales support.
Channel	Vendor channel strategy is appropriate and the channels themselves are strong.



The Info-Tech ALM Vendor Landscape

The zones of the Landscape

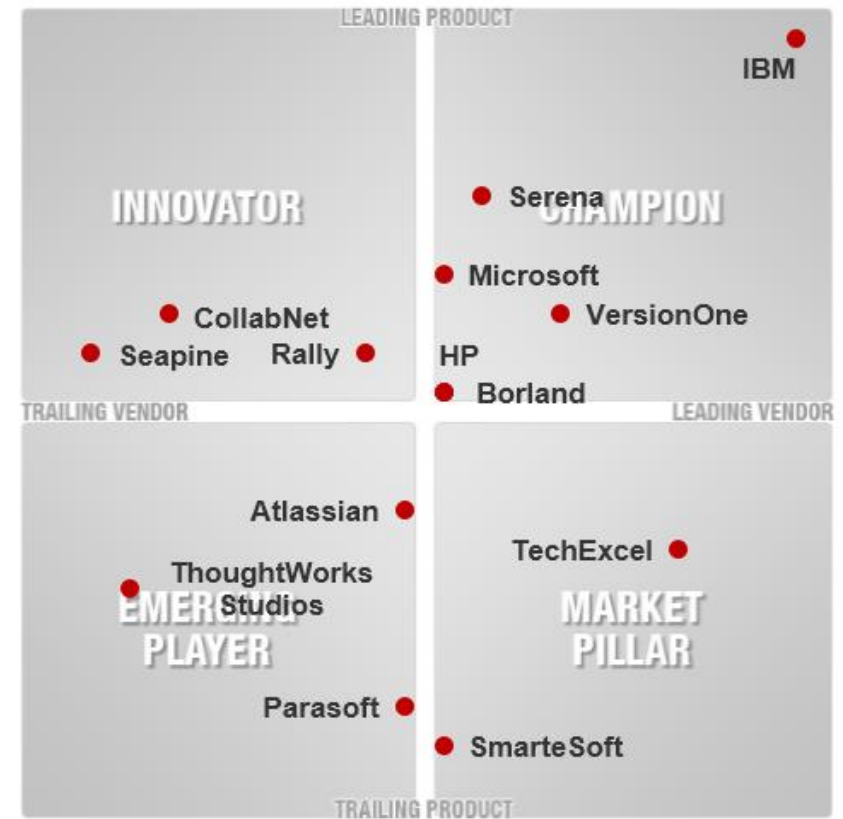
Champions receive high scores for most evaluation criteria and offer excellent value. They have a strong market presence and are usually the trend setters for the industry.

Market Pillars are established players with very strong vendor credentials, but with more average product scores.

Innovators have demonstrated innovative product strengths that act as their competitive advantage in appealing to niche segments of the market.

Emerging Players are comparatively newer vendors who are starting to gain a foothold in the marketplace. They balance product and vendor attributes, though score lower relative to market Champions.

The Info-Tech ALM Vendor Landscape



For an explanation of how the Info-Tech Vendor Landscape is created, see [Information Presentation – Vendor Landscape](#) in the Appendix.

The Info-Tech ALM Value Index

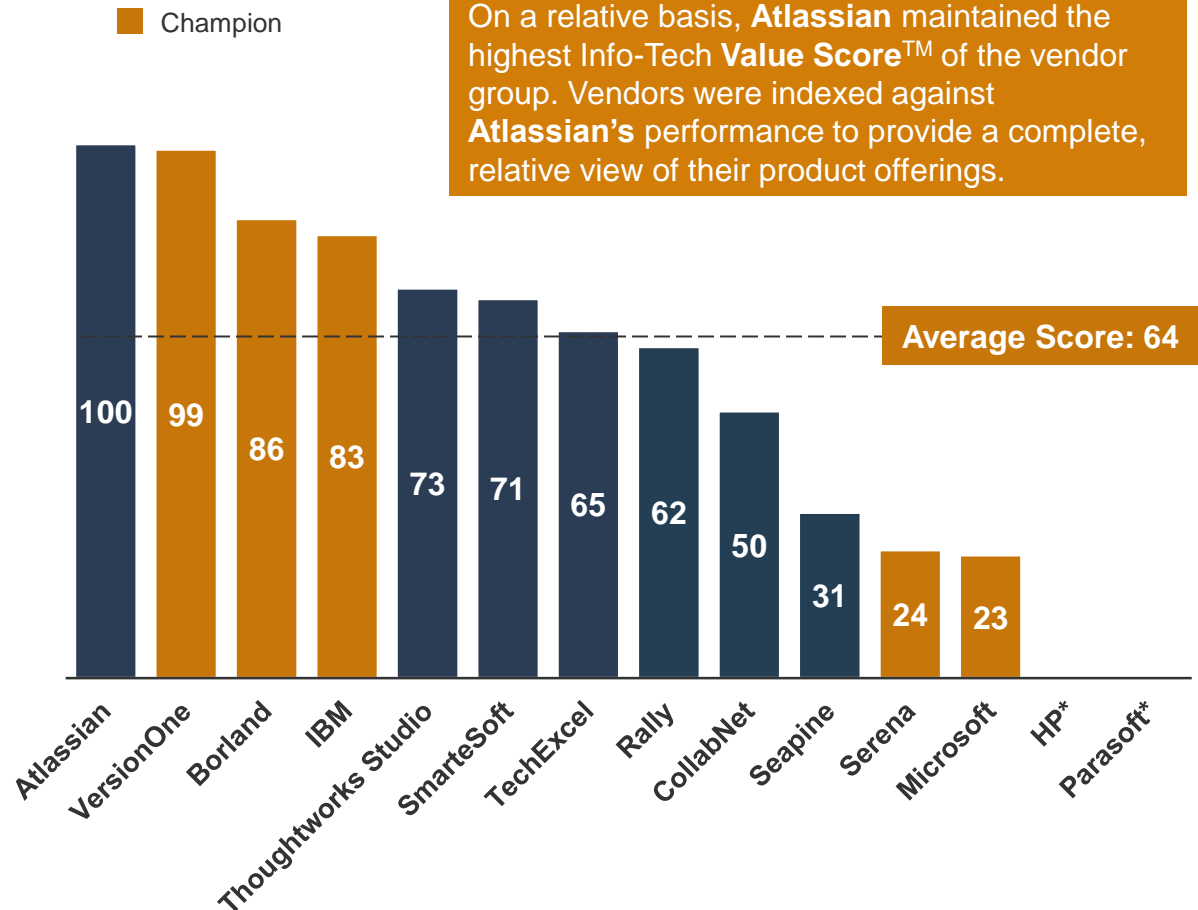
What is a Value Score?

The Value Score indexes each vendor's product offering and business strength **relative to its price point**. It **does not** indicate vendor ranking.

Vendors that score high offer more **bang-for-the-buck** (e.g. features, usability, stability, etc.) than the average vendor, while the inverse is true for those that score lower.

Price-conscious enterprises may wish to give the Value Score more consideration than those who are more focused on specific vendor/product attributes.

*The vendor declined to provide pricing and publicly available pricing could not be found.



For an explanation of how Price is determined, see [Information Presentation – Price Evaluation](#) in the Appendix.

For an explanation of how the Info-Tech Value Index is calculated, see [Information Presentation – Value Index](#) in the Appendix.

Balance individual strengths to find the best fit for your enterprise (1/2)

	Product					Vendor				
	Overall	Features	Usability	Afford.	Arch.	Overall	Viability	Strategy	Reach	Channel
Atlassian										
Borland										
VersionOne										
Serena										
TechExcel										
Seapine										
CollabNet										

*The vendor declined to provide pricing and publicly available pricing could not be found.

For an explanation of how the Info-Tech Harvey Balls are calculated, see [Information Presentation – Criteria Scores \(Harvey Balls\)](#) in the Appendix.

Balance individual strengths to find the best fit for your enterprise (2/2)

	Product					Vendor				
	Overall	Features	Usability	Afford.	Arch.	Overall	Viability	Strategy	Reach	Channel
IBM										
Parasoft *										
Microsoft										
SmarteSoft										
Rally										
ThoughtWorks Studios										
HP *										

*The vendor declined to provide pricing and publicly available pricing could not be found.

For an explanation of how the Info-Tech Harvey Balls are calculated, see [Information Presentation – Criteria Scores \(Harvey Balls\)](#) in the Appendix.

Table Stakes represent the minimum standard; without these, a product doesn't even get reviewed

The Table Stakes

Feature	What it is:
Phase Integration	Comprehensive management of the full lifecycle from requirements through to maintenance.
Reporting	Suite containing canned reports with the ability to export in multiple formats.
Traceability	Mapping between business, functional, and technical requirements.
Graphical User Interface (GUI)	User-friendly interface in ALM product.
Agile Project Management	Provision project management activities in Agile methodologies.

What does this mean?

The products assessed in this Vendor Landscape™ meet, at the very least, the requirements outlined as Table Stakes.

Many of the vendors go above and beyond the outlined Table Stakes, some even do so in multiple categories. This section aims to highlight the products' capabilities **in excess** of the criteria listed here.

Info-Tech Insight

If Table Stakes are all you need from your ALM solution, the only true differentiator for the organization is price. Otherwise, dig deeper to find the best price to value for your needs.

Advanced Features are the capabilities that allow for granular market differentiation

Scoring Methodology

Info-Tech scored each vendor's features offering as a summation of its individual scores across the listed advanced features. Vendors were given one point for each feature the product inherently provided. Some categories were scored on a more granular scale with vendors receiving half points.

Advanced Features

Feature	What we looked for:
Requirements Management, Traceability, & Impact Analysis	Issues, code, artifacts, and defects traced back to high-level requirements. Ability to track progress on resolving issues connected to requirements. Traceability of all activities within a release pipeline.
Build Management	Ability to draw source code from multiple repositories; automated build creation; continuous integration with CI tools; ability to breakdown workload into clusters; API integration with third-party build management tools; and mobile app dev support via integration with mobile development tools.
Test Management	Set-up and teardown of virtual test environments; test results mapped to test cases conducted from build issues and requirements; test summaries delivered to appropriate stakeholders; generate reusable inventory of tests; integration with third-party test management tools; ability to provision cloud-based test environments; and automatic trigger for defect submission for failed tests.

For an explanation of how Advanced Features are determined, see [Information Presentation – Feature Ranks \(Stoplights\)](#) in the Appendix.

Advanced Features are the capabilities that allow for granular market differentiation

Scoring Methodology

Info-Tech scored each vendor's features offering as a summation of its individual scores across the listed advanced features. Vendors were given one point for each feature the product inherently provided. Some categories were scored on a more granular scale with vendors receiving half points.

Advanced Features

Feature	What we looked for:
Bug Tracking & Issue Management	Ability to track bugs by tracing issues with source code changes; vendor's solution can integrate with third-party defect management tools; defects/issues visually represented and prioritized/assigned/planned alongside backlog items/requirements; and notifications sent to impacted stakeholders when defects are created.
Reporting & Analytics	Provide custom result reports for respective stakeholders (e.g. dependency maps, requirement drilldown, relationship tree, burndown, heat map, project plan roadmap); ability for users to find the required data using context-based filtering, sorting, and reporting; reports offer real-time data based on reporting criteria (e.g. format, items to report); web link generation to reports and access to live project data; and create dashboards to track progress of issue management-related tasks and project activity.
Source Code Management	Ability to conduct in-line peer code reviews; ability to review source code change history; and manage multiple source code repositories (e.g. check-out, change, update, check-in).

For an explanation of how Advanced Features are determined, see [Information Presentation – Feature Ranks \(Stoplights\)](#) in the Appendix.

Advanced Features are the capabilities that allow for granular market differentiation

Scoring Methodology

Info-Tech scored each vendor's features offering as a summation of its individual scores across the listed advanced features. Vendors were given one point for each feature the product inherently provided. Some categories were scored on a more granular scale with vendors receiving half points.

Advanced Features

Feature	What we looked for:
Workflow Management	Customize workflows using a visual model; customize workflows using a template; planning and project management capabilities via visual task boards; and data synchronization between file repositories (e.g. integrated tools, database).
Access from Mobile Device	Mobile access to perform ALM tasks.
ALM Deployment to Cloud Services	Ability to deploy the application to a cloud SaaS, PaaS, and/or IaaS-based environment.
Release Management	Create release pipelines which start from source code to production environment without manually integrating/synchronizing multiple repositories or tools; ability to track multiple release schedules concurrently; ability to download entire packages, selected releases, or individual files; release reports indicate what has changed within a release; ability to plan and automate operational change and service requests for a release; release task management; and automated deployment of applications into production/test server.

For an explanation of how Advanced Features are determined, see [Information Presentation – Feature Ranks \(Stoplights\)](#) in the Appendix.

Each vendor offers a different feature set; concentrate on what your organization needs (1/2)

		Evaluated Features									
		Requirements Management	Build Management	Test Management	Bug/Issue Management	Reporting & Analytics	Source Code Management	Workflow Management	Task Access on Mobile	Cloud Deployment	Release Management
Atlassian		●	●	●	●	●	●	●	●	●	●
Borland		●	●	●	●	●	●	●	●	●	●
VersionOne		●	●	●	●	●	●	●	●	●	●
Serena		●	●	●	●	●	●	●	●	●	●
TechExcel		●	●	●	●	●	●	●	●	●	●
Seapine		●	●	●	●	●	●	●	●	●	●
CollabNet		●	●	●	●	●	●	●	●	●	●
Legend		● =Feature fully present			● =Feature partially present/pending			● =Feature absent			

For an explanation of how Advanced Features are determined, see [Information Presentation – Feature Ranks \(Stoplights\)](#) in the Appendix.

Each vendor offers a different feature set; concentrate on what your organization needs (2/2)

		Evaluated Features									
		Requirements Management	Build Management	Test Management	Bug/Issue Management	Reporting & Analytics	Source Code Management	Workflow Management	Task Access on Mobile	Cloud Deployment	Release Management
IBM		●	●	●	●	●	●	●	●	●	●
Parasoft		●	●	●	●	●	●	●	●	●	●
Microsoft		●	●	●	●	●	●	●	●	●	●
SmarteSoft		●	●	●	●	●	●	●	●	●	●
Rally		●	●	●	●	●	●	●	●	●	●
ThoughtWorks		●	●	●	●	●	●	●	●	●	●
HP		●	●	●	●	●	●	●	●	●	●
Legend		● =Feature fully present			● =Feature partially present/pending				● =Feature absent		

For an explanation of how Advanced Features are determined, see [Information Presentation – Feature Ranks \(Stoplights\)](#) in the Appendix.

Shortlist Assistance & Requirements



Arrange a call now: email GuidedImplementations@InfoTech.com or call 1-888-670-8889 and ask for the Guided Implementation Coordinator.

Prior to the Guided Implementation	During the Guided Implementation	Value & Outcome
<ol style="list-style-type: none">1. Have reasoning as to why a new solution is being discussed.2. Compile list of incompetencies and gaps.	<p>An Info-Tech Consulting Analyst will discuss with you:</p> <ul style="list-style-type: none">• Reviewing the market and understanding the rationale behind the evaluation.• Deciding on a deployment method.• Feature analysis.	<p>At the conclusion of the Guided Implementation call, you will have:</p> <ul style="list-style-type: none">• An understanding of the market situation.• A narrowed list of vendors with the customized evaluation tool.• An RFP template to distribute to vendors.

Use a single vendor ALM stack to help reduce integration costs

Single vendor platforms offer the full stack of SDLC activities from requirements tracking to automated release management.

1 End-to-End ALM Stack

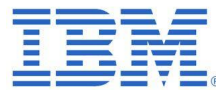
2

3

Why Scenarios?

In reviewing the products included in each Vendor Landscape™, certain use cases come to the forefront. Whether those use cases are defined by applicability in certain locations, relevance for certain industries, or as strengths in delivering a specific capability, Info-Tech recognizes those use cases as Scenarios, and calls attention to them where they exist.

Exemplary Performers



Well-Suited Candidates



For an explanation of how Scenarios are determined, see [Information Presentation – Scenarios](#) in the Appendix.

Leverage a vendor that focuses on managing business expectations with its ALM suite

Consider an ALM solution that maps management expectations to SDLC work items.

1
2 Manage Business Expectations
3

Why Scenarios?

In reviewing the products included in each Vendor Landscape™, certain use cases come to the forefront. Whether those use cases are defined by applicability in certain locations, relevance for certain industries, or as strengths in delivering a specific capability, Info-Tech recognizes those use cases as Scenarios, and calls attention to them where they exist.

Exemplary Performers



Borland



PARASOFT

Well-Suited Candidates



For an explanation of how Scenarios are determined, see [Information Presentation – Scenarios](#) in the Appendix.

Utilize an ALM solution which provides a highly customizable UI to tailor the solution to your needs

Configure the metadata and flow of the UI to go beyond the “look-and-feel” expectations of end users.

1

2

3 UI Customization

Why Scenarios?

In reviewing the products included in each Vendor Landscape™, certain use cases come to the forefront. Whether those use cases are defined by applicability in certain locations, relevance for certain industries, or as strengths in delivering a specific capability, Info-Tech recognizes those use cases as Scenarios, and calls attention to them where they exist.

Visual Customization (Non-technical)



Non-Visual Customization (Technical)



For an explanation of how Scenarios are determined, see [Information Presentation – Scenarios](#) in the Appendix.

RFP & Budget Review



Arrange a call now: email GuidedImplementations@InfoTech.com or call 1-888-670-8889 and ask for the Guided Implementation Coordinator.

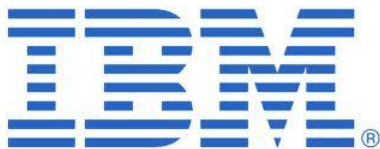
Prior to the Guided Implementation	During the Guided Implementation	Value & Outcome
<ol style="list-style-type: none">1. Collect RFPs from vendors based on the template provided.	<p>An Info-Tech Consulting Analyst will discuss with you:</p> <ul style="list-style-type: none">• Reviewing price benchmarking.• Reviewing returned RFPs.	<p>At the conclusion of the Guided Implementation call, you will have:</p> <ul style="list-style-type: none">• Narrow list of vendors.• Clear understanding of the capabilities of the solutions on the shortlist.• A demo script to use during presentations with the final list of vendors.

IBM has a flexible ALM with extensive configuration options

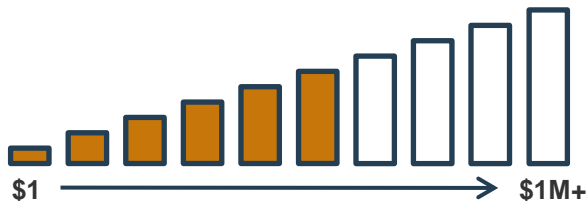


Champion

Product: IBM Rational
Employees: 435,000
Headquarters: Armonk, NY
Website: ibm.com
Founded: 1911
Presence: NYSE: IBM
FY13 Revenue: \$99.7 B



3 year TCO for this solution falls into pricing tier 6, between \$50,000 and \$100,000



Pricing provided by vendor.

Overview

- An open unified platform of all lifecycle activities that provides a fusion of workflows across collaborative lifecycle management (CLM), builds on a common set of security, reporting, linking, and process templates which are shared across disparate teams.

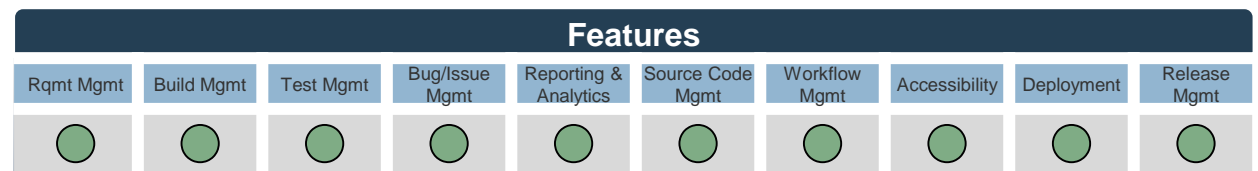
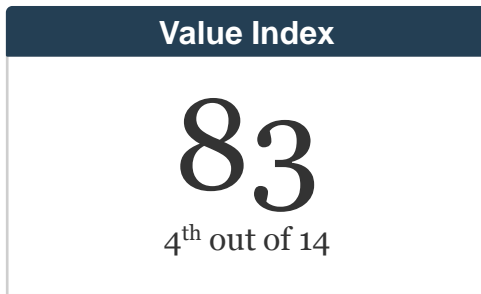
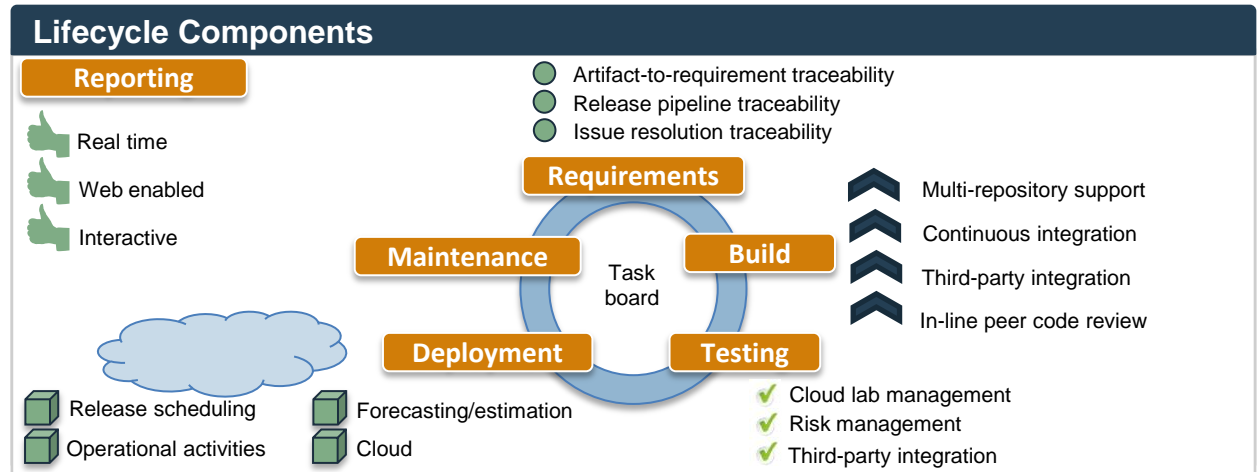
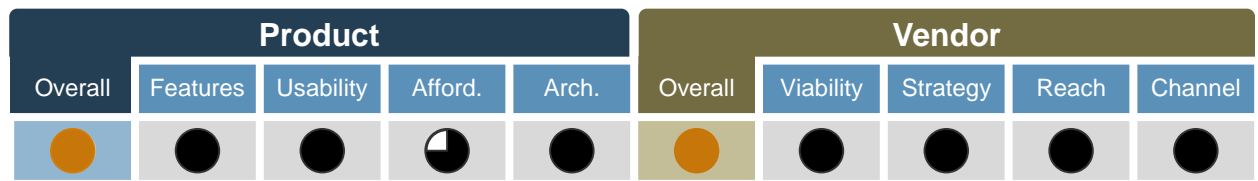
Strengths

- Extensive traceability capabilities with built-in traceability views as well as offline traceability reporting.
- Comprehensive release management processes which include tracking end-to-end development release pipelines, plan and automate operational change and service requests, and automated deployment of apps to production/test environments.

Challenges

- IBM has a rich ALM toolset, but may require separate purchases for product extensions to aid in development – flexible licensing is available.

IBM has a flexible ALM with extensive configuration options



Info-Tech Recommends:

Organizations seeking a premium product to manage complex requirements should add IBM's line of Rational products to their shortlist.

Serena delivers a high-functionality ALM suite packaged within a powerful process orchestration engine

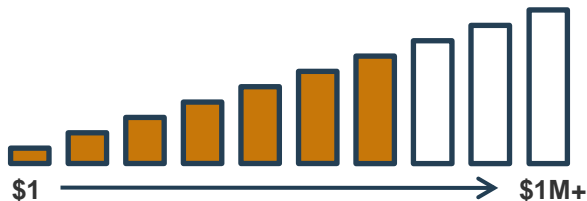


Champion

Product: Serena Suite
Employees: 550
Headquarters: San Mateo, CA
Website: serena.com
Founded: 1980
Presence: Privately Held



3 year TCO for this solution falls into pricing tier 7, between \$100,000 and \$250,000



Pricing provided by vendor.

Overview

- ALM suite with a process-based approach to managing the ALM lifecycle to help organizations coordinate processes and tools across traditionally siloed departments like development, operations, and IT help desk.

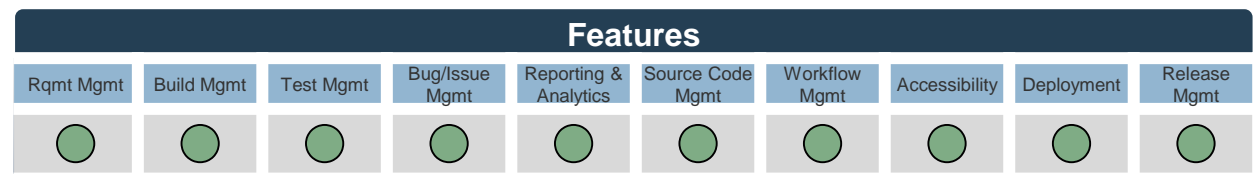
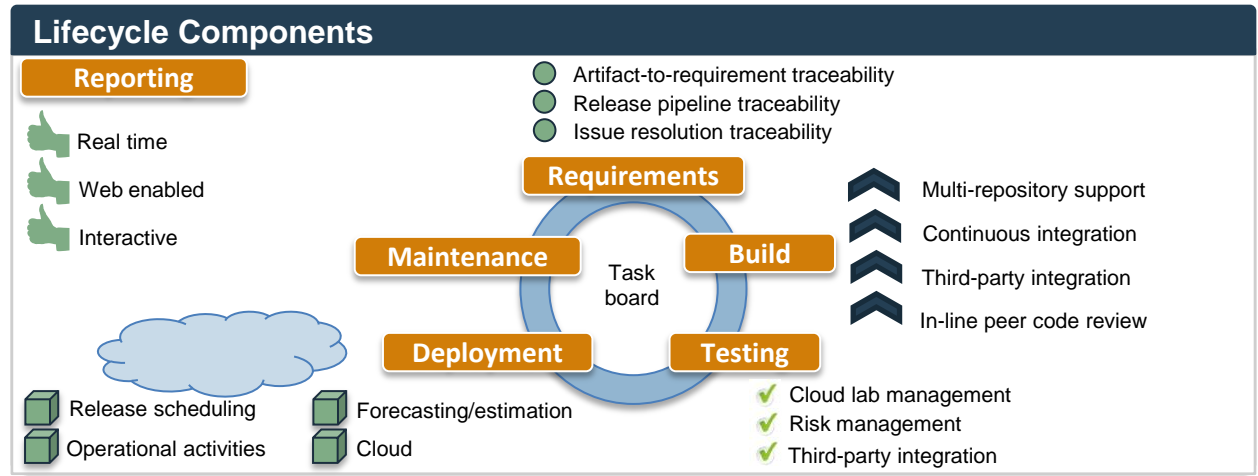
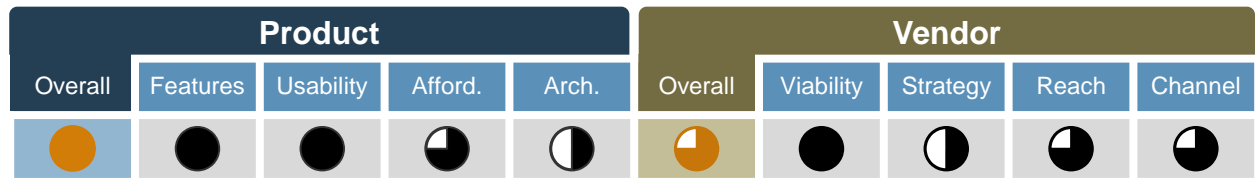
Strengths

- Bridge the Agile-Waterfall gap by orchestrating processes across distributed “water-scrum-fall” projects and teams – from the initial business request through development and into deployment/production.
- Integrated solution support offering for mainframe and distributed environments for entire lifecycle.
- Comprehensive release management capabilities with automated deployment of applications into production/test environments.

Challenges

- Relatively expensive ALM solution.

Serena delivers a high-functionality ALM suite packaged within a powerful process orchestration engine



Info-Tech Recommends:

Serena will make sense for large organizations that are looking to integrate teams distributed across silos, using different tools, and developing for multiple platforms.

Microsoft provides an ALM collaboration platform which supports Agile across the entire IT lifecycle

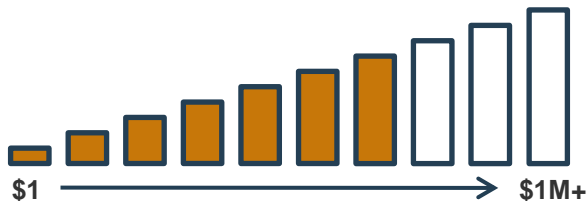


Champion

Product: Microsoft Visual Studio Team Foundation Server (TFS)
Employees: 127,104
Headquarters: Redmond, WA
Website: microsoft.com
Founded: 1975
Presence: NASDAQ: MSFT
FY13 Revenue: \$77.8 B



3 year TCO for this solution falls into pricing tier 7, between \$100,000 and \$250,000



Pricing solicited from public sources.

Overview

- Microsoft Visual Studio TFS delivers a tightly integrated ALM solution that is architected for the Microsoft stack and works out-of-the-box with Agile and CMMI ALM methodologies as well as any customized flow a development team chooses.

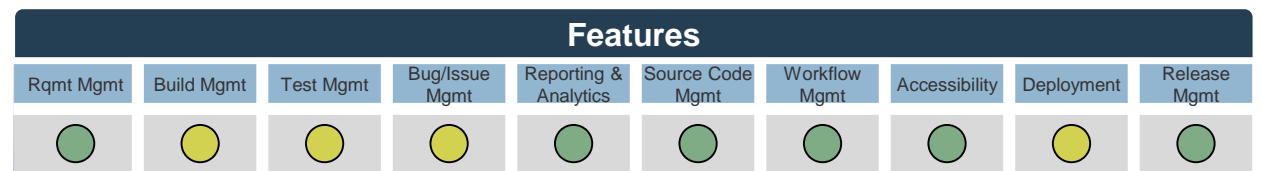
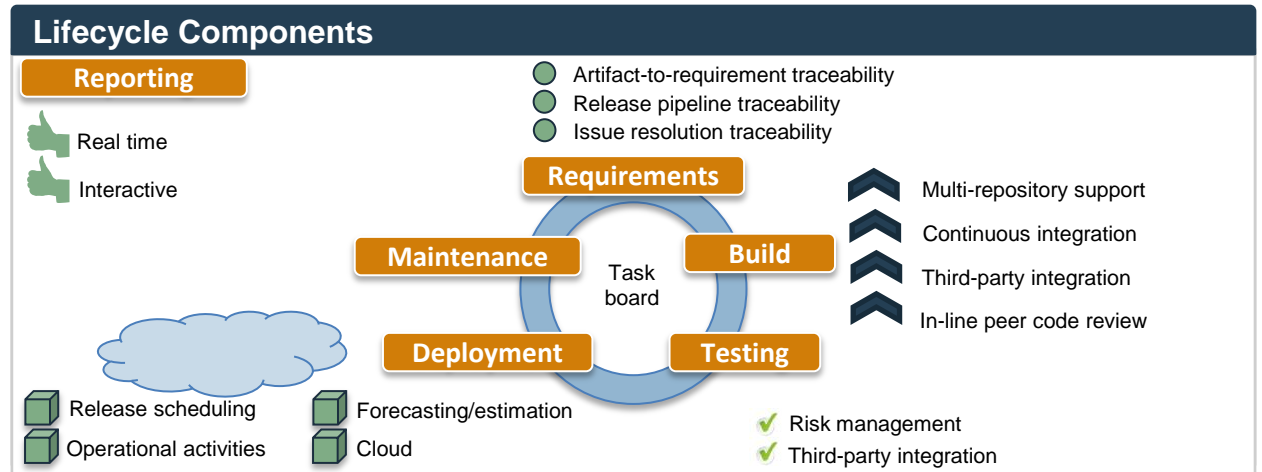
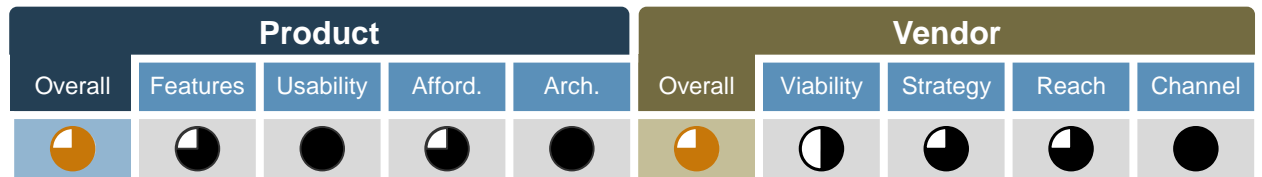
Strengths

- Microsoft demonstrates strong integration with the Microsoft stack from task creation to the build cycle with policy-based controls and deployment to Azure or on-premise infrastructure.
- Visual Studio TFS provides leading edge capabilities around virtualization and management for construction and reusability of test labs for scenario-based testing.

Challenges

- Microsoft relies on third-party plug-in support for early stage requirements gathering.
- Unable to provision cloud-based test environments.

Microsoft provides an ALM collaboration platform which supports Agile across the entire IT lifecycle



Info-Tech Recommends:

Clients developing specifically for Microsoft stack environments will benefit most from Visual Studio TFS. While this offering may not be ideal for hybrid development environments, clients should still consider the benefits of this highly integrated solution.

VersionOne is a full-featured ALM making innovative strides in collaboration and workflow management

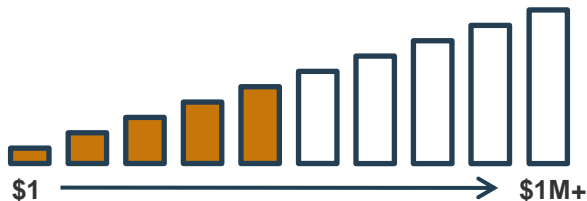


Champion

Product: Agile ALM
Employees: 135
Headquarters: Alpharetta, GA
Website: versionone.com
Founded: 2002
Presence: Privately Held



3 year TCO for this solution falls into pricing tier 5, between \$25,000 and \$50,000



Pricing provided by vendor.

Overview

- Agile project and portfolio management solution focusing on integrating with best of breed solutions to target upstream planning and management capabilities.
- Built from the ground up to scale Agile within large organizations.

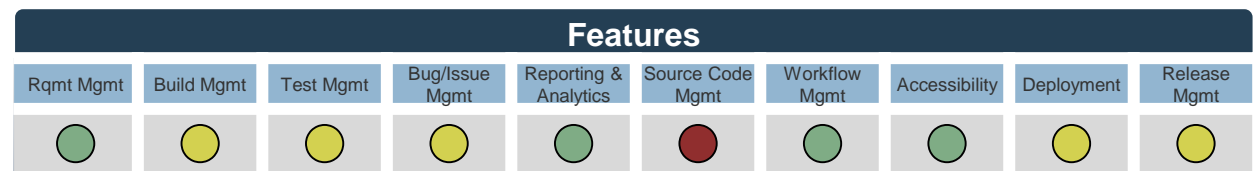
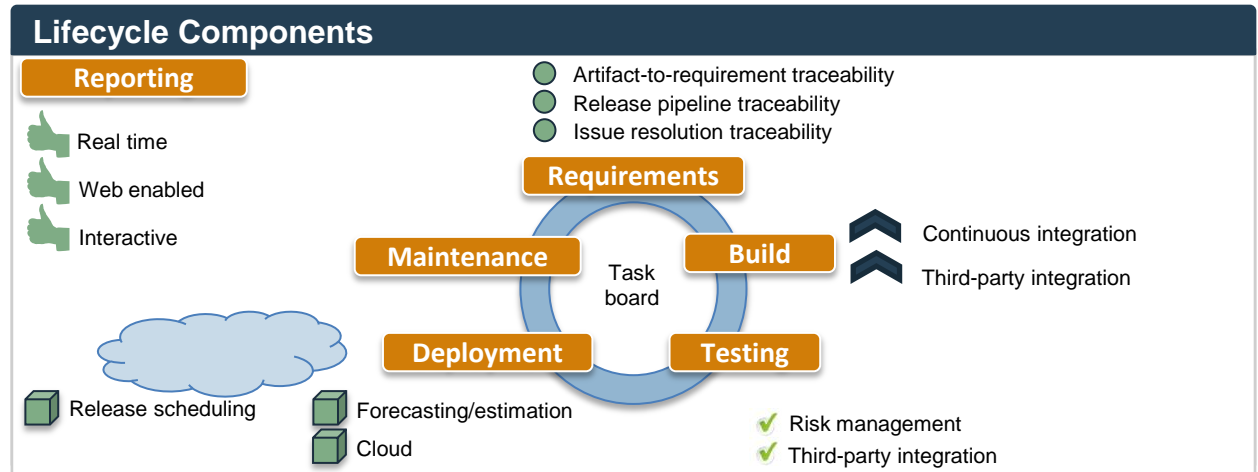
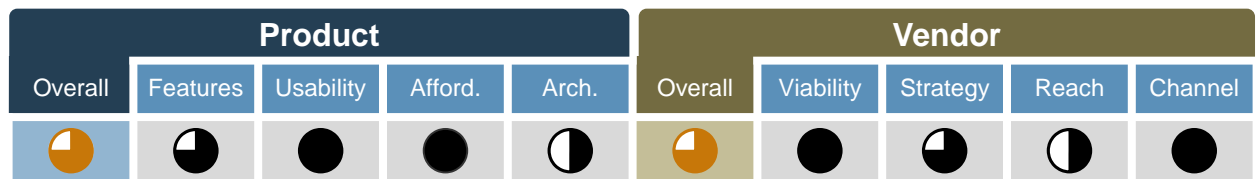
Strengths

- Release and iteration planning and management with integrated time, progress, and status tracking.
- Built-in customer collaboration to automatically generate issues, defects, stories, and epics, and maintain traceability across the lifecycle.
- Multiple API connectors to leading third-party commercial and open-source ALM tools.

Challenges

- Lack of built-in build management capabilities.
- Lack of content assessment solution integration capabilities.

VersionOne is a full-featured ALM making innovative strides in collaboration and workflow management



Info-Tech Recommends:

VersionOne is suitable for Agile or Kanban organizations looking to standardize the entire application development process from portfolio management to deployment.

HP provides full application lifecycle management from requirements definition to performance testing



Champion

Product: ALM
Employees: 317,500
Headquarters: Palo Alto, CA
Website: hp.com
Founded: 1939
Presence: NYSE: HPQ
FY13 Revenue: \$112.3 B



Overview

- HP ALM tools provide full traceability across all activities throughout the SDLC and enables teams to develop and continuously deliver in Agile methodologies.

Strengths

- Large network of strategic and technology partners worldwide with providing users with extensive support.
- Comprehensive reporting capabilities from real-time, context-based reporting to custom report creation.
- Ability to provision both virtual and cloud-based test environments.

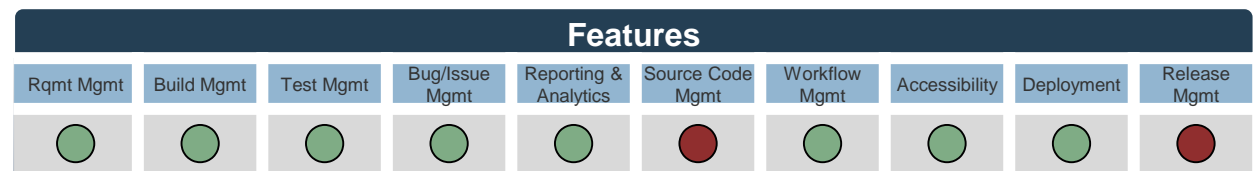
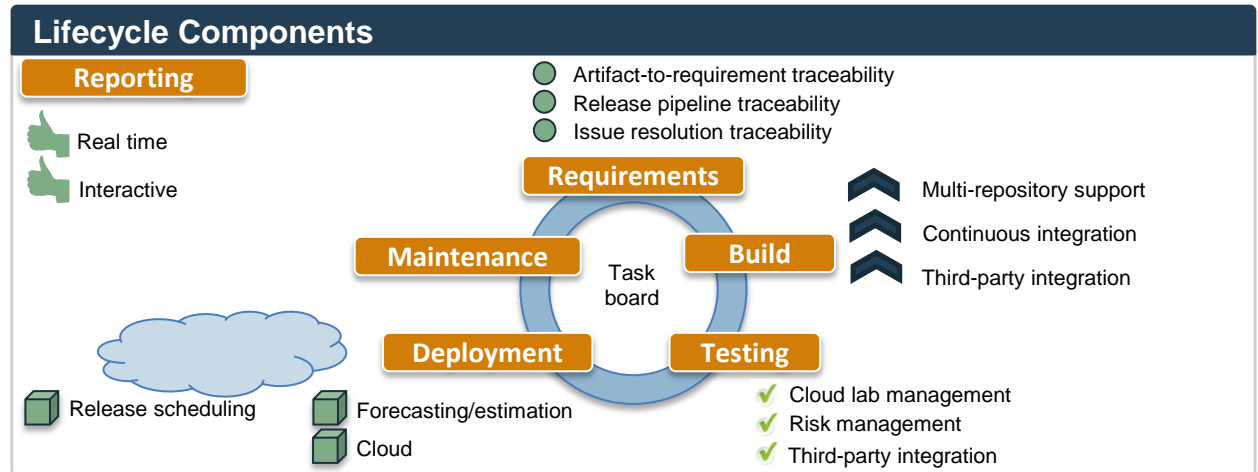
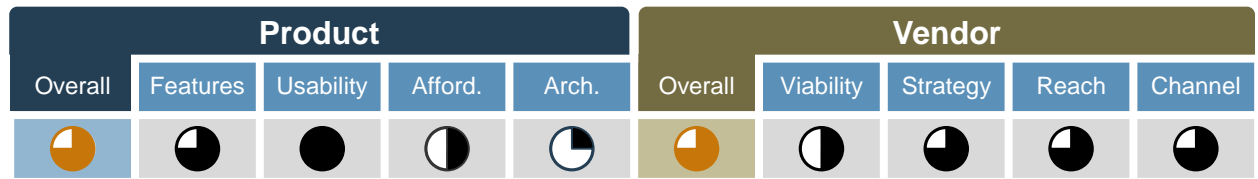
Challenges

- Limited integration capabilities with third-party defect tracking/management tools.

The vendor declined to provide pricing, and publicly available pricing could not be found



HP provides full application lifecycle management from requirements definition to performance testing



Info-Tech Recommends:

Organizations looking to utilize a heavily configurable ALM suite coupled with extensive support systems will find HP's ALM toolset a right fit.

Borland provides full-featured ALM with strong customer and reseller support

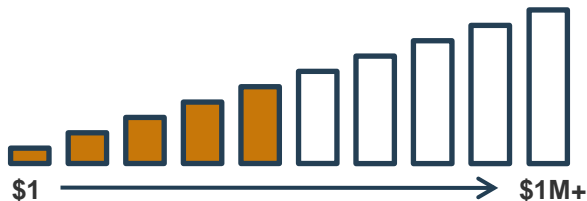


Champion

Product: Caliber, Silk, StarTeam
Employees: 1,200
Headquarters: Newbury, UK
Website: microfocus.com
Founded: 1976
Presence: LON: MCRO
FY13 Revenue: \$412.2 M

Borland

3 year TCO for this solution falls into pricing tier 5, between \$25,000 and \$50,000



Pricing provided by vendor.

Overview

- Full application development lifecycle product emphasizing precision in requirements management, control in change management, and validation in the testing domain.
- Micro Focus is the parent company of Borland.

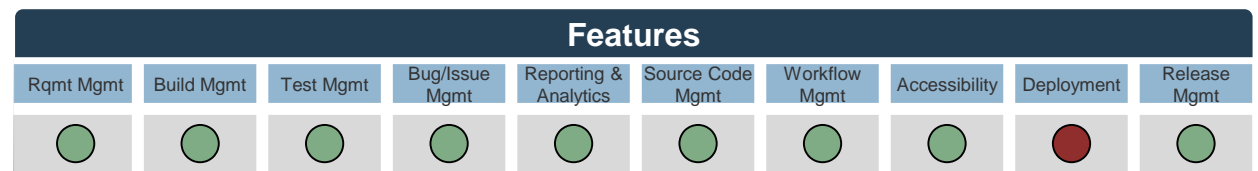
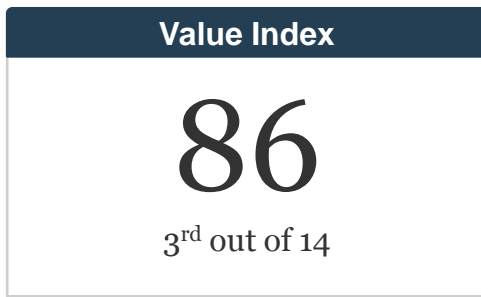
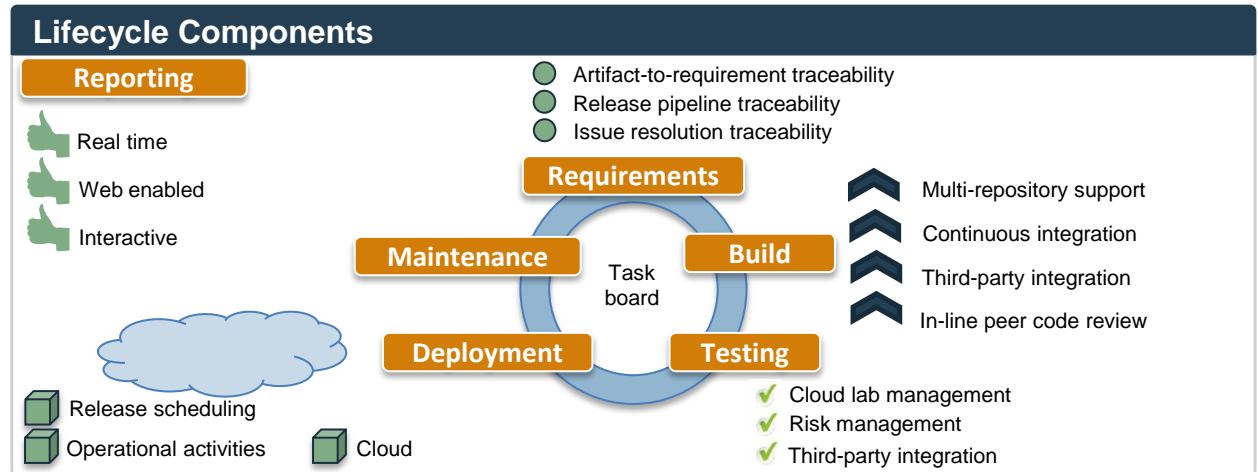
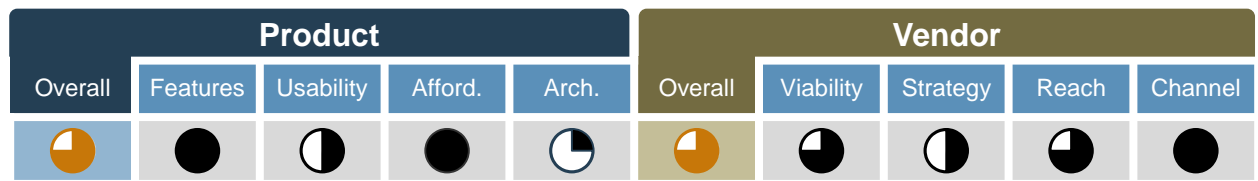
Strengths

- Requirements management and traceability of all activities within a release pipeline.
- Flexible integration with multiple tools already in use within a given infrastructure.
- In-line peer code review and access to multiple source code repositories.
- Customizable development workflows using a simple visual model.

Challenges

- Automated defect submission for failed tests.
- Forecasting, estimation, and capacity management for the release pipeline.

Borland provides full-featured ALM with strong customer and reseller support



Info-Tech Recommends:

Clients seeking a robust feature set with automated testing capabilities should explore the Caliber and Silk offerings from Micro Focus. For a leading software change and configuration management tool, consider StarTeam.

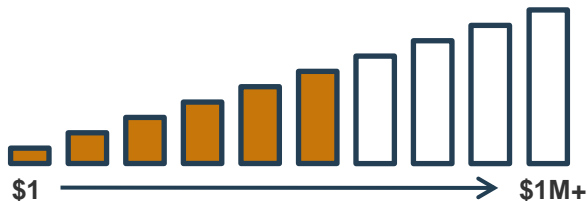
TechExcel offers flexibility and a range of ALM features

Market Pillar

Product: DevSuite
Employees: 155
Headquarters: Lafayette, CA
Website: techexcel.com
Founded: 1995
Presence: Privately Held



3 year TCO for this solution falls into pricing tier 6, between \$50,000 and \$100,000



Pricing provided by vendor.

Overview

- ALM solution with an integrated suite of web-based products, providing interface customization and product portfolio planning and management capabilities.

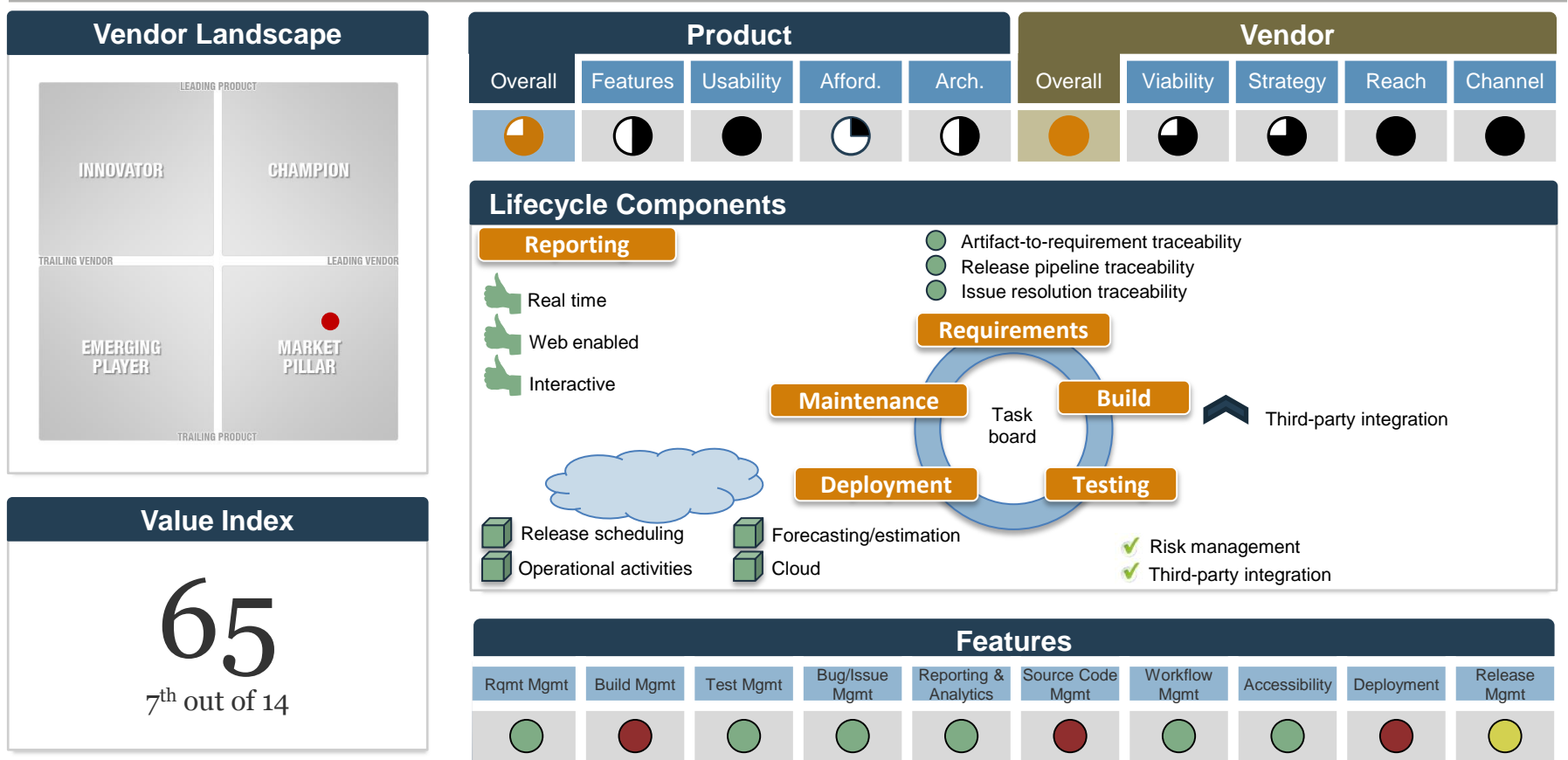
Strengths

- Seamless integration with TechExcel's IT Service Management and CRM solutions, enabling DevOps.
- Extensive issue management, which includes prioritization, planning, and assignment alongside backlog work items.
- Traceability of all activities within release pipelines.
- ALM accessibility through native iPad and Android tablet applications.

Challenges

- Build management capabilities (draw source code from multiple repositories, automated build creation, continuous integration using CI tools).
- Set-up and teardown of virtual test environments.

TechExcel offers flexibility and a range of ALM features



Info-Tech Recommends:

Organizations with existing requirements assets in Word format will find TechExcel's two-way synchronization feature useful in continuing to manage legacy assets.

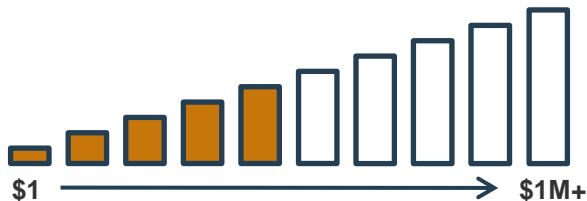
SmarteSoft provides a full-featured ALM at a competitive price

Market Pillar

Product: SmarteSuite
Employees: 25
Headquarters: Austin, TX
Website: smarteSoft.com
Founded: 1999
Presence: Privately Held

SmarteSoftTM
Test ▶ Automation ▶▶▶ Made Easy

3 year TCO for this solution falls into pricing tier 5, between \$25,000 and \$50,000



Pricing provided by vendor.

Overview

- The suite centers around SmarteQM, a quality-oriented ALM and testing tool providing tight integrations with third-party plugins for build, test, and issue tracking.

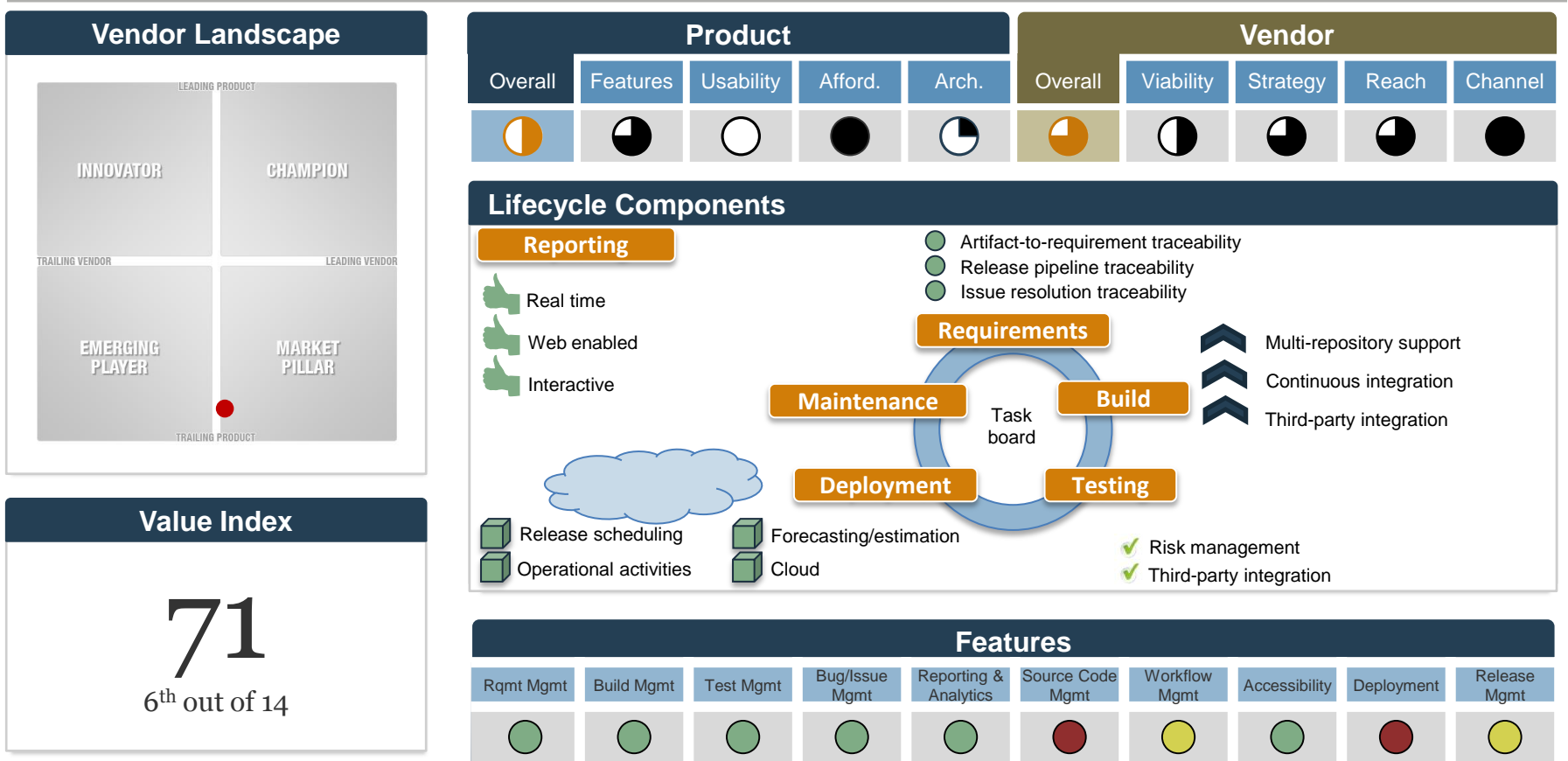
Strengths

- Customizable workflow in SmarteQM allows users to adapt to various development platforms and methodologies.
- Extensive test management capabilities providing test reporting capabilities, automatic trigger for defect submission, and third-party integration.

Challenges

- Unable to provision virtual and cloud-based test environments.
- Does not provide the capabilities to conduct in-line peer code reviews.

SmarteSoft provides a full-featured ALM at a competitive price



Info-Tech Recommends:

SmarteSoft's credentials in test management software will make this a suitable choice for ALM customers with heavy testing and quality management needs.

Rally has a highly customizable ALM solution with its apps, concentrating on bridging business and technical domains

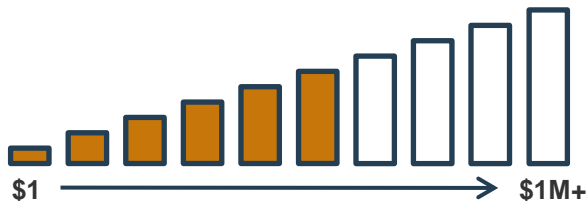


Innovator

Product: Agile Portfolio Manager
Employees: 494
Headquarters: Boulder, CO
Website: rallydev.com
Founded: 2002
Presence: NYSE: RALY
FY13 Revenue: \$57 M



3 year TCO for this solution falls into pricing tier 6, between \$50,000 and \$100,000



Pricing solicited from public sources.

Overview

- Rally has carved a niche for itself by building on the strength of Agile in the ALM space early on. Its rapidly growing client base also recognizes the value in its cloud-based offering.

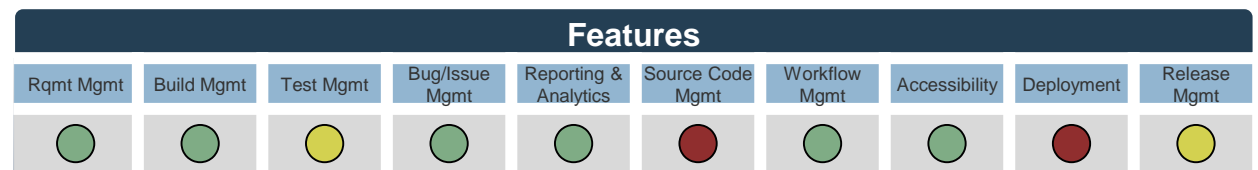
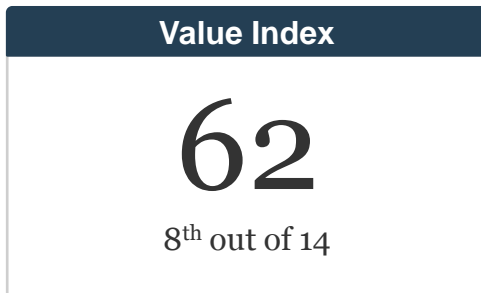
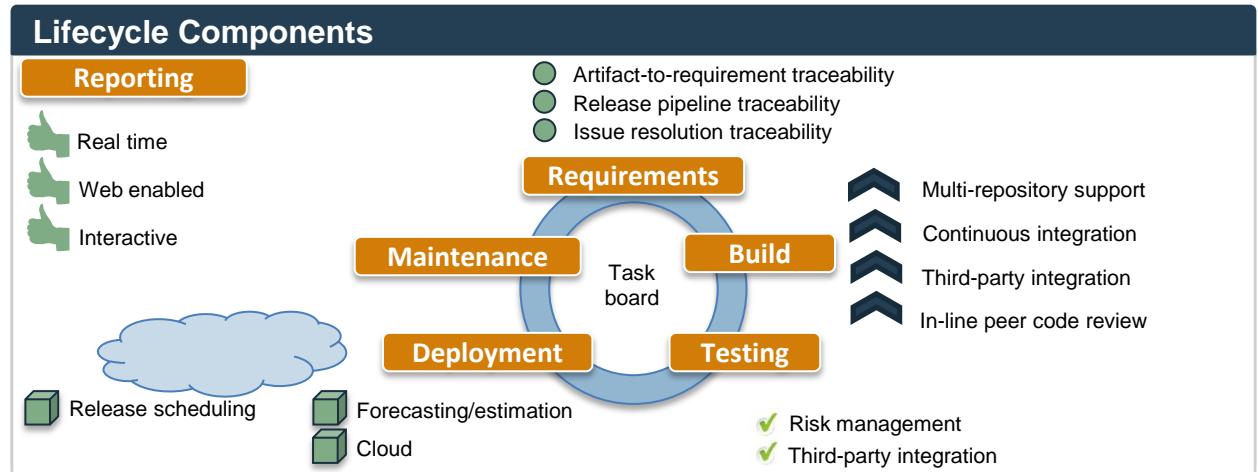
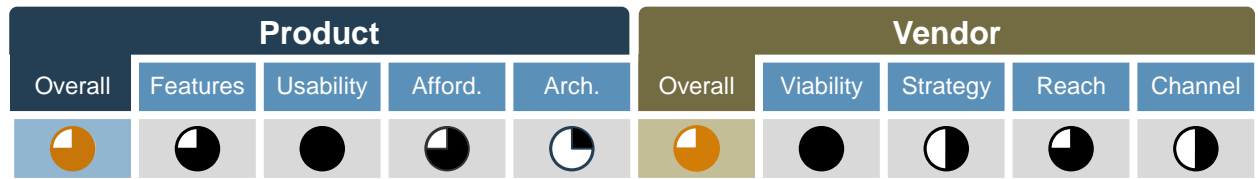
Strengths

- Reporting and analytics collected on teams/teams-of-teams, including performance benchmarking through productivity, responsiveness, quality, and predictability (scalable to tens of thousands of Agile teams).
- Collaboration platform provides threaded team chat, integrated inbox, social media and RSS integration, drag/drop file share, search, tagging, and DevOps.

Challenges

- Lacks automated build capabilities.
- Unable to provision virtual and cloud-based test environments.

Rally has a highly customizable ALM solution with its apps, concentrating on bridging business and technical domains



Info-Tech Recommends:

Rally will be useful for organizations looking for a lightweight Agile solution in the cloud.

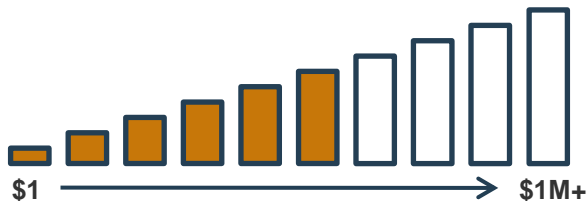
CollabNet is a strong all-around enterprise player with compelling cloud options

Innovator

Product: TeamForge 7.2
Employees: 300
Headquarters: Brisbane, CA
Website: collab.net
Founded: 1999
Presence: Privately Held



3 year TCO for this solution falls into pricing tier 6, between \$50,000 and \$100,000



Pricing solicited from public sources.

Overview

- ALM provided with feature flexibility proven to provide large-scale enterprises streamline application delivery processes in Agile contexts.

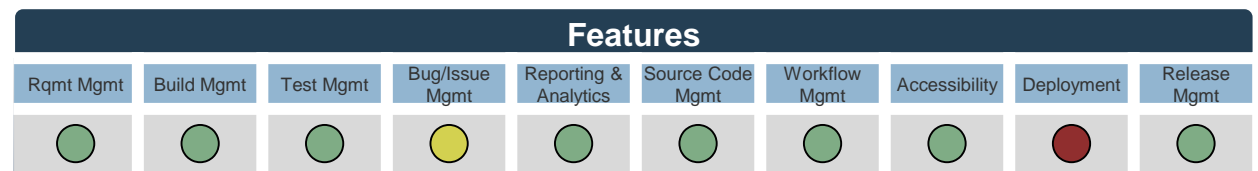
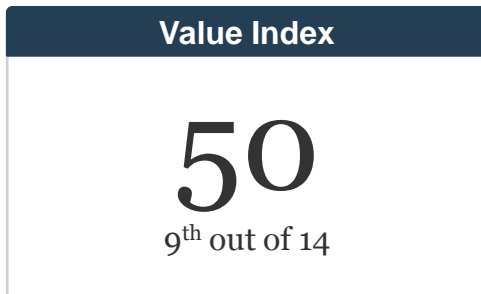
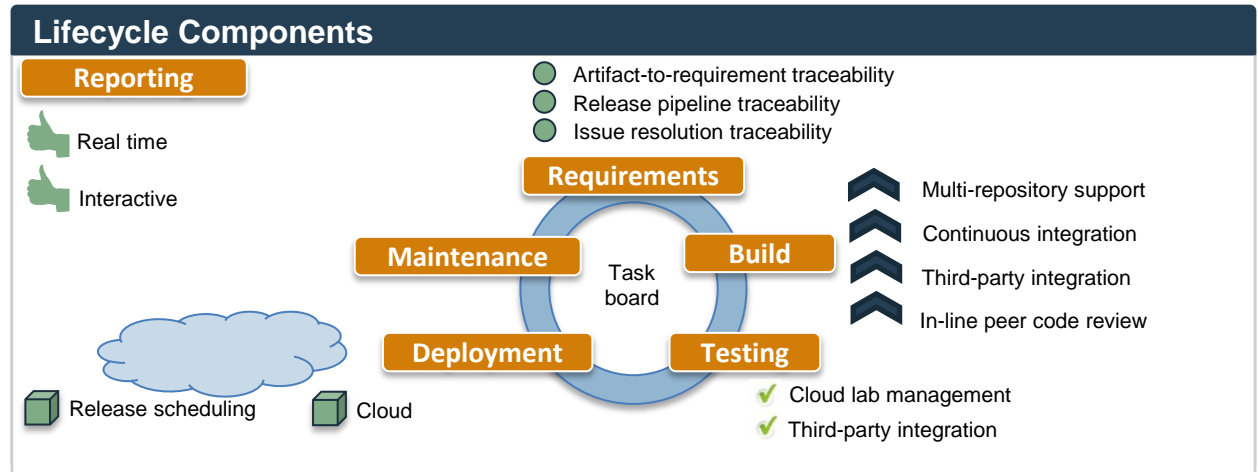
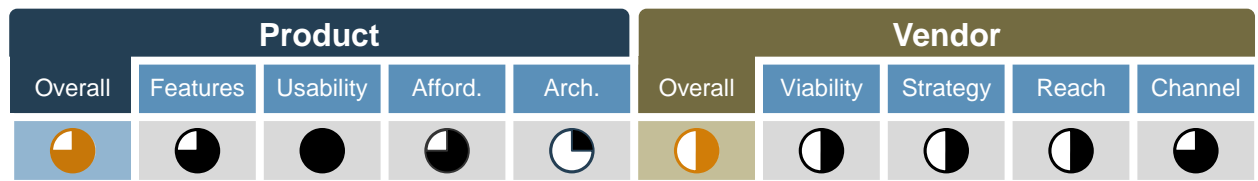
Strengths

- Support for Agile scrum, Waterfall, and/or iterative process frameworks.
- Ability to track multiple release instances concurrently using flexible dashboards.
- TeamForge Lab provides testing capabilities which include set-up and teardown of virtual test environments.
- Comprehensive requirements management which provides work item, defect, and issue traceability and progress tracking.

Challenges

- Unable to generate a reusable library of tests.
- Lack of risk management capabilities for testing activities.
- Inability to automate operational change and service requests related to a release pipeline.

CollabNet is a strong all-around enterprise player with compelling cloud options



Info-Tech Recommends:

CollabNet offers a solid ALM solution that is well-suited to companies who aim to transition to Agile development processes and are looking to grow their cloud environments.

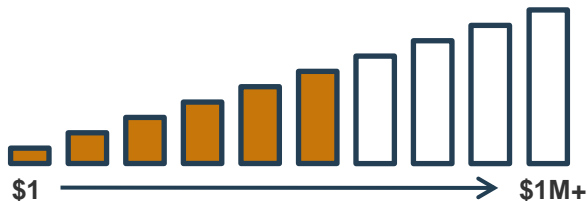
Seapine has a customizable ALM that addresses each stage of the application lifecycle

Innovator

Product: ALM
Employees: 125
Headquarters: Mason, OH
Website: seapine.com
Founded: 1995
Presence: Privately Held



3 year TCO for this solution falls into pricing tier 6, between \$50,000 and \$100,000



Pricing provided by vendor.

Overview

- Cost-effective ALM solution with seamless configurability and traceability of activities throughout a product development lifecycle.

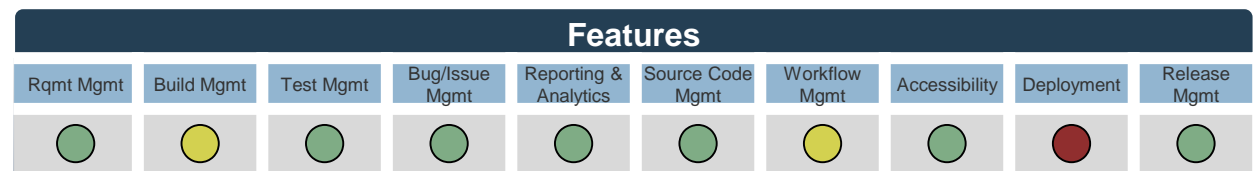
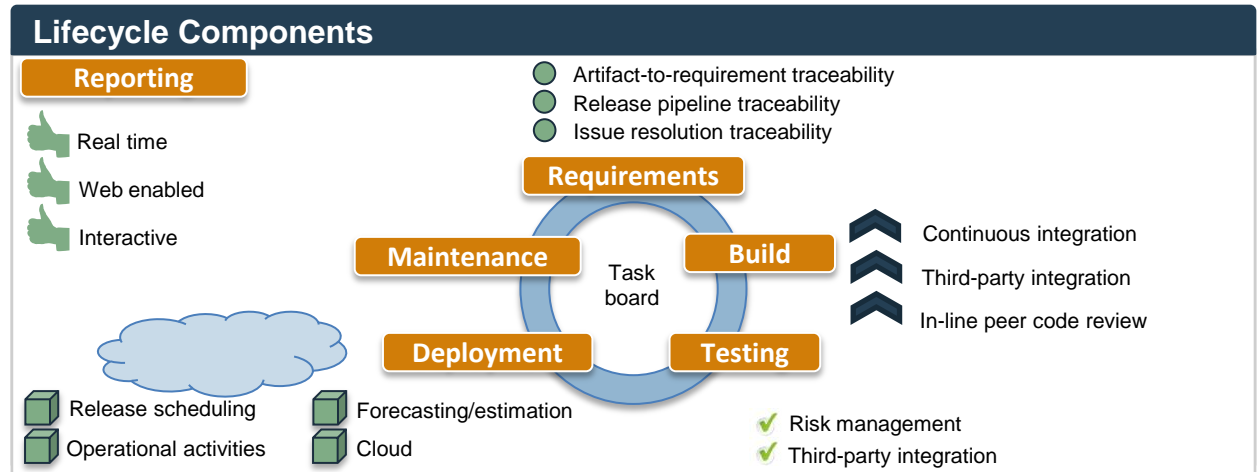
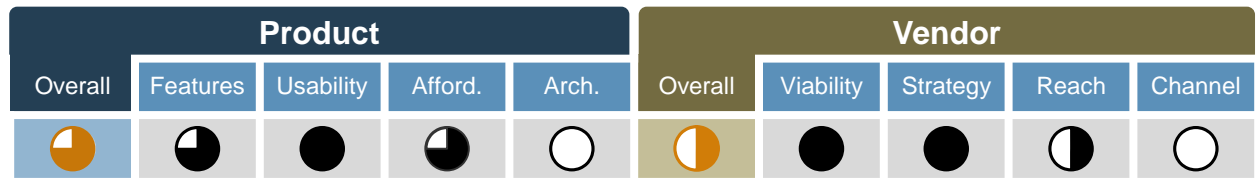
Strengths

- Comprehensive requirements management, traceability, and progress analysis.
- Ability to conduct in-line peer code reviews and review source code change history.
- Provides test management out of the box and can also integrate with third-party test management tools.

Challenges

- Lack of build management capabilities (draw source code from multiple repositories, able to breakdown workloads into smaller components for incremental releases).
- Customizable development workflows using a simple visual model.

Seapine has a customizable ALM that addresses each stage of the application lifecycle



Info-Tech Recommends:

Organizations requiring unlimited test case management and web-based requirements approval across teams should consider Seapine.

Atlassian's issue tracking tool provides coverage in all areas of ALM



Emerging Player

Product: Bamboo, Bitbucket, Fisheye, JIRA, JIRA Agile, Stash, Confluence

Employees: 850+

Headquarters: Sydney, Australia

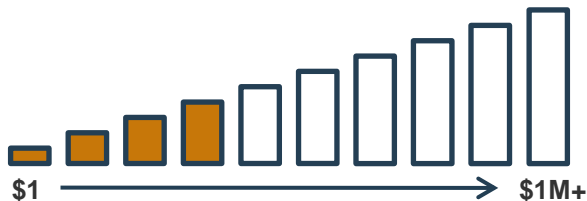
Website: atlassian.com

Founded: 2002

Presence: Privately Held



3 year TCO for this solution falls into pricing tier 4, between \$10,000 and \$25,000



Pricing provided by vendor.

Overview

- Highly customizable à-la-carte solution that accommodates multiple Agile methods.

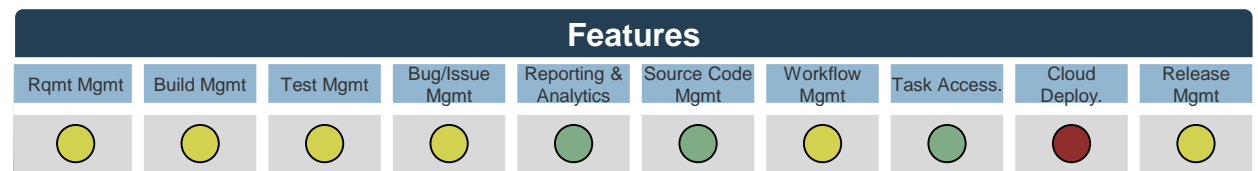
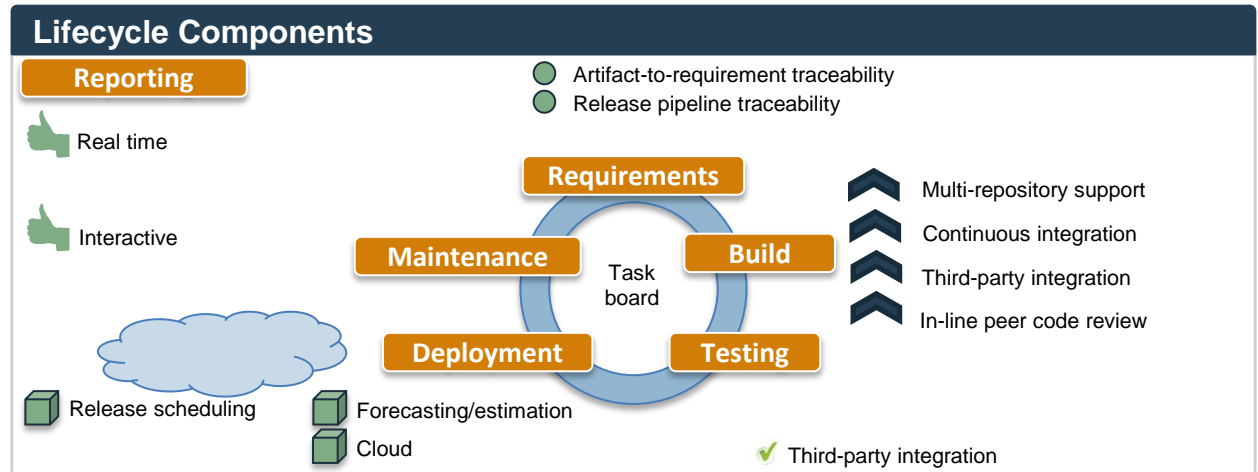
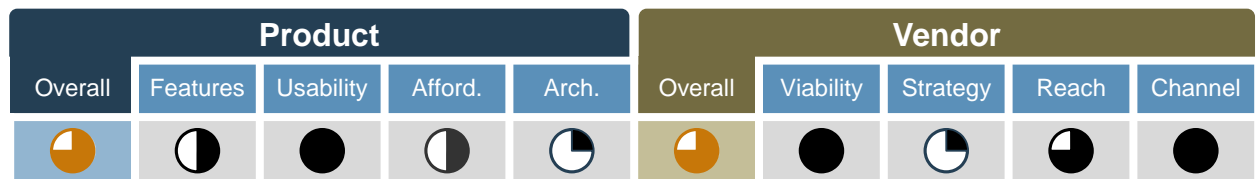
Strengths

- Creates release pipelines which extend from source code to production environment.
- Capacity planning and management based on accurate forecasting.
- Ability to conduct in-line peer code review and access multiple source code repositories.

Challenges

- Lack of integration with third-party test management tools.

Atlassian's issue tracking tool provides coverage in all areas of ALM



Info-Tech Recommends:

Atlassian's pricing and strong capabilities for collaboration make it a viable solution for mid-sized, cost-conscious, globally-distributed enterprises. A separate requirements management tool would serve as a useful complement to Atlassian's offering.

Parasoft delivers a comprehensive ALM solution with tight policy management capabilities

Emerging Player

Product: Development Testing Platform (Concerto)
Employees: 250
Headquarters: Monrovia, CA
Website: parasoft.com
Founded: 1987
Presence: Privately Held



The vendor declined to provide pricing, and publicly available pricing could not be found



Overview

- Software development management platform which combines policy-driven project management with test lifecycle management to convert management expectations into measurable tasks and enforcement points in the development process.

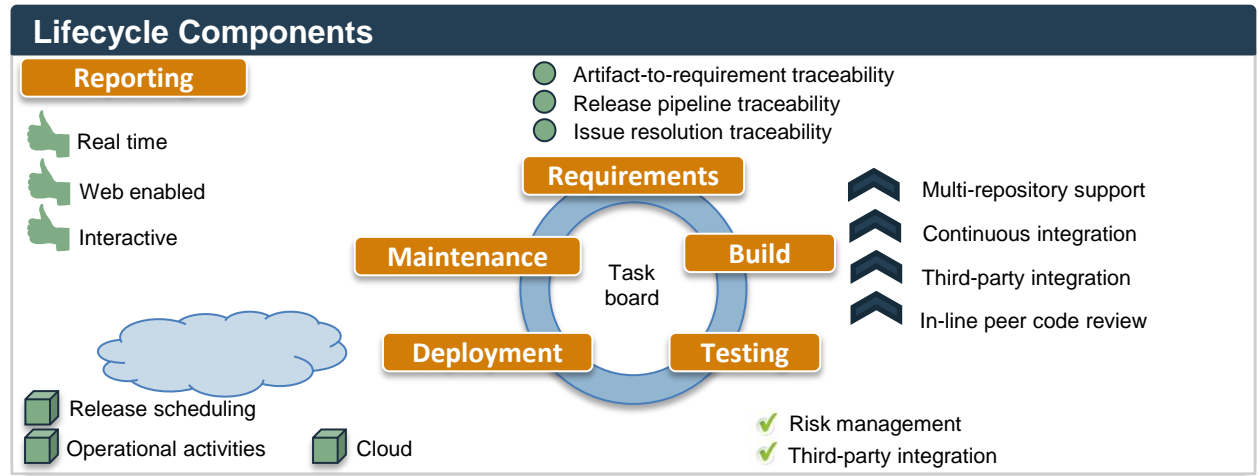
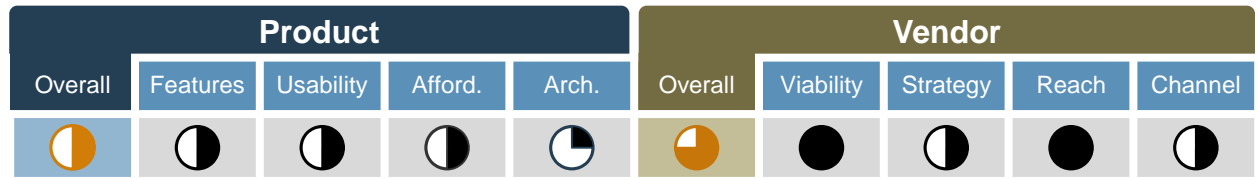
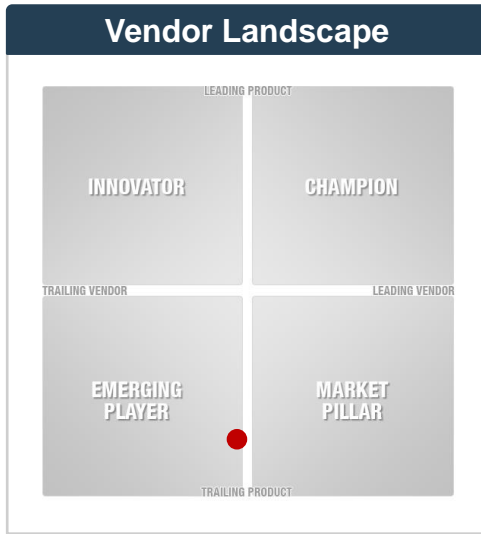
Strengths

- Parasoft integrates with multiple IDEs even beyond the industry standards delivering end users a seamless experience.
- Using Policy Center, clients can effectively integrate defect prevention into their software development lifecycle.
- Comprehensive reporting capabilities which include custom report creation and context-based filtering and sorting.

Challenges

- Inability to conduct in-line peer code reviews.

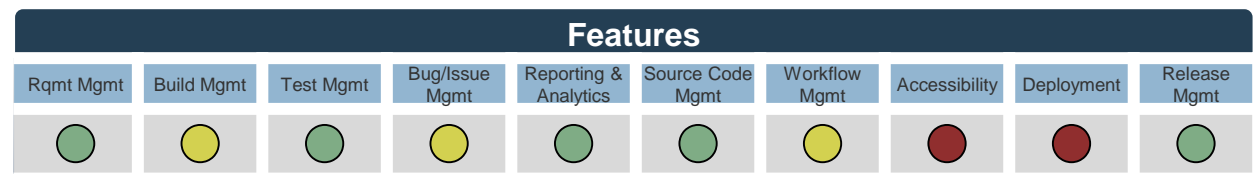
Parasoft delivers a comprehensive ALM solution with tight policy management capabilities



Value Index

N/A

The vendor declined to provide pricing, and publicly available pricing could not be found.



Info-Tech Recommends:

Organizations looking to map all SDLC artifacts to business expectations should add Parasoft to their shortlist. Parasoft's ALM suite will be particularly compelling for organizations with high compliance requirements.

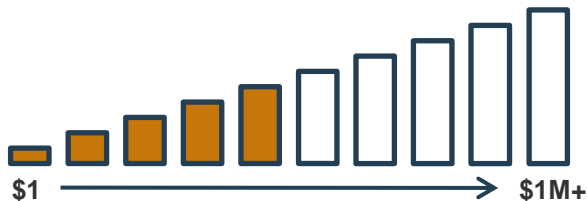
ThoughtWorks Studios has a strong offering for Agile, but limited support for Waterfall or other methods

Emerging Player

Product: Mingle, Twist, Go
Employees: 2,000
Headquarters: Chicago, IL
Website: thoughtworks-studios.com
Founded: 1993
Presence: Privately Held

ThoughtWorks®
STUDIOS

3 year TCO for this solution falls into pricing tier 5, between \$25,000 and \$50,000



Pricing solicited from public sources.

Overview

- ThoughtWorks Studios provides a robust offering for Agile development with its Mingle, Twist, and Go products.

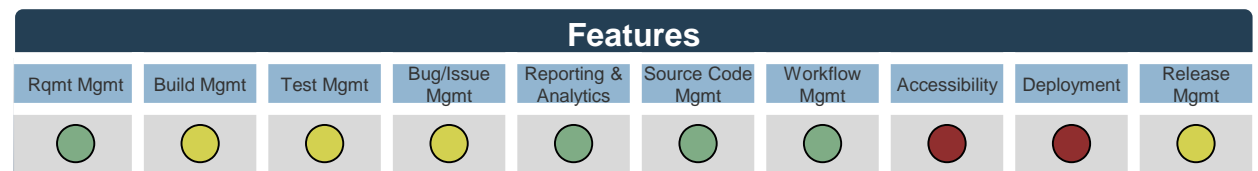
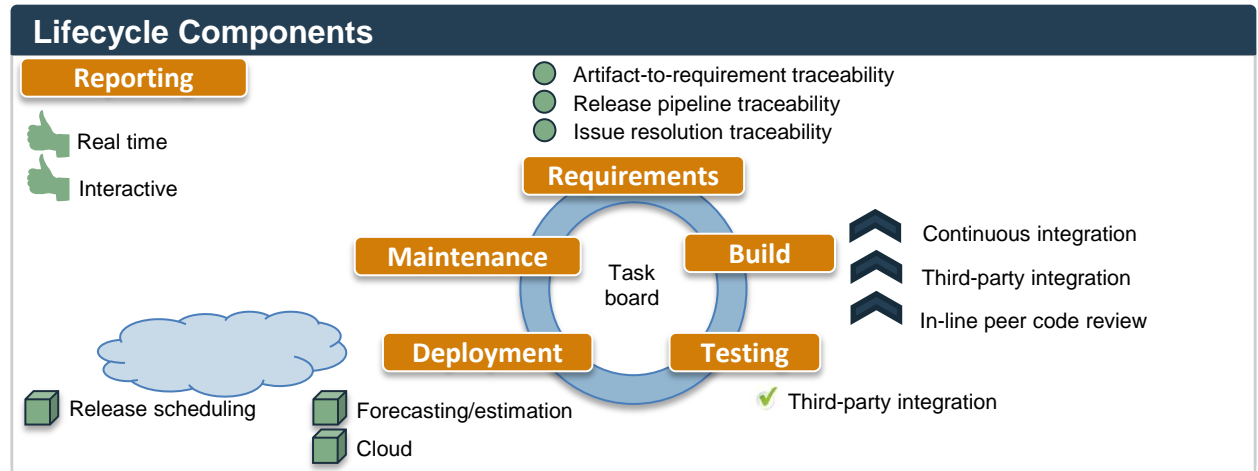
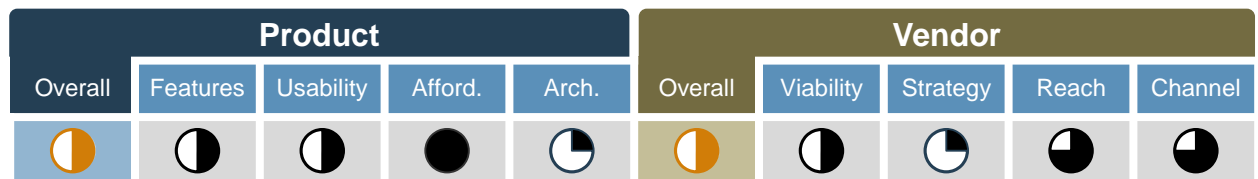
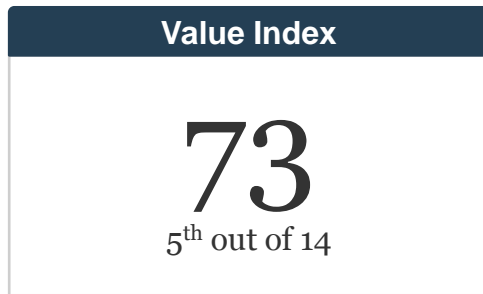
Strengths

- ThoughtWorks Studios includes most of the functionality associated with full-featured ALM, from requirements to task management.
- Provides continuous integration with CI tools and release management capabilities.
- With Twist, ThoughtWorks Studios is one of the smaller players in ALM to boast an automated testing solution.

Challenges

- ThoughtWorks offers support offering with email-only support.
- Limited capabilities for Waterfall methodologies.

ThoughtWorks Studios has a strong offering for Agile, but limited support for Waterfall or other methods



Info-Tech Recommends:

Organizations looking to use an Agile tool with vendor support and UI simplicity for Agile will find ThoughtWorks Studios a convenient one-stop top vendor.

Contract Review and Negotiation Tactics



Arrange a call now: email GuidedImplementations@InfoTech.com or call 1-888-670-8889 and ask for the Guided Implementation Coordinator.

Prior to the Guided Implementation

1. Bring final contracts received from vendors on shortlist.

During the Guided Implementation

An Info-Tech Consulting Analyst will discuss with you:

- Reviewing your contracts to ensure the contract is fair and in line with industry standards.
- The best negotiation tactics to get the best value for your purchase.

Value & Outcome

At the conclusion of the Guided Implementation call, you will have:

- Tactics on how to get a better price on your solution.
- Confidence in the solution you are purchasing.

Identify leading candidates with the *ALM Vendor Shortlist & Detailed Feature Analysis Tool*

The Info-Tech [ALM Vendor Shortlist & Detailed Feature Analysis Tool](#) is designed to generate a customized shortlist of vendors based on *your* key priorities.

This tool offers the ability to modify:

Overall Vendor vs. Product Weightings

• Individual product criteria weightings:

- ✓ Features
- ✓ Usability
- ✓ Affordability
- ✓ Architecture

• Individual vendor criteria weightings:

- ✓ Viability
- ✓ Strategy
- ✓ Reach
- ✓ Channel



Issue an RFP to ensure that the vendor fits *your* needs, not the other way around



Use Info-Tech's [**Application Lifecycle Management Request for Proposal Template**](#) to conduct this critical step in your vendor selection process.

Info-Tech's *ALM RFP Template* is populated with critical elements including:

- The Statement of Work
- Proposal Preparation Instructions
- Scope of Work
- Basic Feature Requirements
- Advanced Feature Requirements
- Sizing and Implementation
- Vendor Qualifications and References
- Budget and Estimated Pricing
- Vendor Certification

INFO~TECH
RESEARCH GROUP

Application Lifecycle Management Request for Proposal Template

Introduction: How to Use This Template

A Request for Proposal (RFP) is a formal invitation issued by a business or agency requesting interested vendors to submit written proposals meeting a particular set of requirements. If interested in bidding for the project, vendors respond with a description of the techniques they would employ to meet the requirements, a plan of work, and a detailed budget for the project, along with supporting information. An RFP may form part of the final contract once negotiations between the enterprise and the vendor are completed.

Delete all information where text is colored GREY (such as this paragraph). Fill in or delete all form fields shaded in GREY (such as the "Insert Company Name Here" field below). Form shading is not visible in printouts.

Change all necessary text to **BLACK** before printing or sending.

For tailored RFPs, be sure to check out Info-Tech's solution-specific RFP templates at www.infotech.com.

Insert Company Name Here

Request for Proposal for an Application Lifecycle Management Solution

Insert Date of Issue Here

Page 1
Info-Tech Research Group

Take charge of vendor finalist demos with a *Vendor Demonstration Script*



A product demo, using Info-Tech's [Application Lifecycle Management Vendor Demo Script](#), helps enterprise decision makers better understand the capabilities and constraints of various solutions.

The ALM Vendor Demonstration Script will:

- Provide vendors with a consistent set of instructions for key scenarios from the perspective of IT and departmental managers.
- Outline solution capabilities and processes around:
 - Artifact Traceability
 - Workflow Management
 - Reporting

INFO~TECH
RESEARCH GROUP

Application Lifecycle Management Vendor Demo Script

Introduction: How to Use This Tool

This demonstration script template is designed to help the IT department provide vendors with a consistent set of instructions ensuring an objective comparison of Application Lifecycle Management (ALM) product features. It is not intended as an exhaustive list of every product feature for the vendor to demonstrate, but rather to force the vendor to demonstrate important, common processes and tasks that IT and business users can expect to execute if that particular ALM solution is adopted. Modify this script to fit individual needs and requirements.

The demonstration may be conducted onsite, remotely, or at the site of a reference customer in the local geographical area, depending on the capabilities and availability of the vendor and the requirements of your organization.

Delete all information where text is colored GREY (such as this paragraph). Fill in or delete all GREY text in parentheses and square brackets (such as the "INSERT ENTERPRISE NAME" field below).
Be sure to change all necessary text to **BLACK** before printing or sending.

Introduction

This demonstration is designed to give (INSERT ENTERPRISE NAME) a comprehensive understanding of the ALM solution capabilities and constraints. The demo will last approximately (INSERT TIME) (X:X) hours including (INSERT TIME) (X:X) hours of scripted demo, an additional (INSERT TIME) (X:X) for showcasing unique elements, answering (INSERT ENTERPRISE NAME) questions, and (INSERT QUANTITY) (X) (INSERT TIME) (X:X) minute breaks.

Scenario 1 – Artifact Traceability

Goal: To demonstrate ability to trace issues, code, and defects back to high-level requirements, and ability to track progress of resolving issues, code builds, and defect resolution.

Requirements Management:

- a) Demonstrate ability to trace requirements to business expectations.

Source Code and Build Management:

- a) Demonstrate ability to trace requirements to source code and builds.

Test and Defect Management:

- a) Demonstrate ability to trace requirements to issues and defects.
- b) Demonstrate ability to track progress of resolving defects and issues.

Release Management

- a) Demonstrate ability to trace requirements to build, app, and/or file releases.

Scenario 2 – Workflow Management

Goal: To demonstrate ability to view tasks in a workflow visualizations or templates.

Task Management

- a) Demonstrate ability to do the following:
 - i. Issue management.
 - ii. Create new tasks set by new requirements.
 - iii. Resolve defects using workflows.

Info-Tech Research Group
1

Appendix

1. Vendor Landscape Methodology: Overview
2. Vendor Landscape Methodology: Product Selection & Information Gathering
3. Vendor Landscape Methodology: Scoring
4. Vendor Landscape Methodology: Information Presentation
5. Vendor Landscape Methodology: Fact Check & Publication
6. Product Pricing Scenario
7. Reference Diagram

Vendor Landscape Methodology: Overview

Info-Tech's Vendor Landscapes are research materials that review a particular IT market space, evaluating the strengths and abilities of both the products available in that space, as well as the vendors of those products. These materials are created by a team of dedicated analysts operating under the direction of a senior subject matter expert over a period of six weeks.

Evaluations weigh selected vendors and their products (collectively "solutions") on the following eight criteria to determine overall standing:

- **Features:** The presence of advanced and market-differentiating capabilities.
- **Usability:** The intuitiveness, power, and integrated nature of administrative consoles and client software components.
- **Affordability:** The three-year total cost of ownership of the solution.
- **Architecture:** The degree of integration with the vendor's other tools, flexibility of deployment, and breadth of platform applicability.
- **Viability:** The stability of the company as measured by its history in the market, the size of its client base, and its financial performance.
- **Strategy:** The commitment to both the market-space, as well as to the various sized clients (small, mid-sized, and enterprise clients).
- **Reach:** The ability of the vendor to support its products on a global scale.
- **Channel:** The measure of the size of the vendor's channel partner program, as well as any channel strengthening strategies.

Evaluated solutions are plotted on a standard two by two matrix:

- **Champions:** Both the product and the vendor receive scores that are above the average score for the evaluated group.
- **Innovators:** The product receives a score that is above the average score for the evaluated group, but the vendor receives a score that is below the average score for the evaluated group.
- **Market Pillars:** The product receives a score that is below the average score for the evaluated group, but the vendor receives a score that is above the average score for the evaluated group.
- **Emerging Players:** Both the product and the vendor receive scores that are below the average score for the evaluated group.

Info-Tech's Vendor Landscapes are researched and produced according to a strictly adhered to process that includes the following steps:

- Vendor/product selection
- Information gathering
- Vendor/product scoring
- Information presentation
- Fact checking
- Publication

This document outlines how each of these steps is conducted.

Vendor Landscape Methodology: Vendor/Product Selection & Information Gathering

Info-Tech works closely with its client base to solicit guidance in terms of understanding the vendors with whom clients wish to work and the products that they wish evaluated; this demand pool forms the basis of the vendor selection process for Vendor Landscapes. Balancing this demand, Info-Tech also relies upon the deep subject matter expertise and market awareness of its Senior, Lead, and Principle Research Analysts to ensure that appropriate solutions are included in the evaluation. As an aspect of that expertise and awareness, Info-Tech's analysts may, at their discretion, determine the specific capabilities that are required of the products under evaluation, and include in the Vendor Landscape only those solutions that meet all specified requirements.

Information on vendors and products is gathered in a number of ways via a number of channels.

Initially, a request package is submitted to vendors to solicit information on a broad range of topics. The request package includes:

- A detailed survey.
- A pricing scenario (see Vendor Landscape Methodology: Price Evaluation and Pricing Scenario, below).
- A request for reference clients.
- A request for a briefing and, where applicable, guided product demonstration.

These request packages are distributed approximately twelve weeks prior to the initiation of the actual research project to allow vendors ample time to consolidate the required information and schedule appropriate resources.

During the course of the research project, briefings and demonstrations are scheduled (generally for one hour each session, though more time is scheduled as required) to allow the analyst team to discuss the information provided in the survey, validate vendor claims, and gain direct exposure to the evaluated products. Additionally, an end-user survey is circulated to Info-Tech's client base and vendor-supplied reference accounts are interviewed to solicit their feedback on their experiences with the evaluated solutions and with the vendors of those solutions.

These materials are supplemented by a thorough review of all product briefs, technical manuals, and publicly available marketing materials about the product, as well as about the vendor itself.

Refusal by a vendor to supply completed surveys or submit to participation in briefings and demonstrations does not eliminate a vendor from inclusion in the evaluation. Where analyst and client input has determined that a vendor belongs in a particular evaluation, it will be evaluated as best as possible based on publicly available materials only. As these materials are not as comprehensive as a survey, briefing, and demonstration, the possibility exists that the evaluation may not be as thorough or accurate. Since Info-Tech includes vendors regardless of vendor participation, it is always in the vendor's best interest to participate fully.

All information is recorded and catalogued, as required, to facilitate scoring and for future reference.

Vendor Landscape Methodology: Scoring

Once all information has been gathered and evaluated for all vendors and products, the analyst team moves to scoring. All scoring is performed at the same time so as to ensure as much consistency as possible. Each criterion is scored on a ten point scale, though the manner of scoring for criteria differs slightly:

- Features is scored via **Cumulative Scoring**
- Affordability is scored via **Scalar Scoring**
- All other criteria are scored via **Base5 Scoring**

In Cumulative Scoring, a single point is assigned to each evaluated feature that is regarded as being fully present, partial points to each feature that is partially present, and zero points to features that are deemed to be absent or unsatisfactory. The assigned points are summed and normalized to a value out of ten. For example, if a particular Vendor Landscape evaluates eight specific features in the Feature Criteria, the summed score out of eight for each evaluated product would be multiplied by 1.25 to yield a value out of ten.

In Scalar Scoring, a score of ten is assigned to the lowest cost solution, and a score of one is assigned to the highest cost solution. All other solutions are assigned a mathematically determined score based on their proximity to / distance from these two endpoints. For example, in an evaluation of three solutions, where the middle cost solution is closer to the low end of the pricing scale it will receive a higher score, and where it is closer to the high end of the pricing scale it will receive a lower score; depending on proximity to the high or low price it is entirely possible that it could receive either ten points (if it is very close to the lowest price) or one point (if it is very close to the highest price). Where pricing cannot be determined (vendor does not supply price and public sources do not exist), a score of 0 is automatically assigned.

In Base5 scoring a number of sub-criteria are specified for each criterion (for example, Longevity, Market Presence, and Financials are sub-criteria of the Viability criterion), and each one is scored on the following scale:

- 5 - The product/vendor is exemplary in this area (nothing could be done to improve the status).
- 4 - The product/vendor is good in this area (small changes could be made that would move things to the next level).
- 3 - The product/vendor is adequate in this area (small changes would make it good, more significant changes required to be exemplary).
- 2 - The product/vendor is poor in this area (this is a notable weakness and significant work is required).
- 1 - The product/vendor is terrible/fails in this area (this is a glaring oversight and a serious impediment to adoption).

The assigned points are summed and normalized to a value out of ten as explained in Cumulative Scoring above.

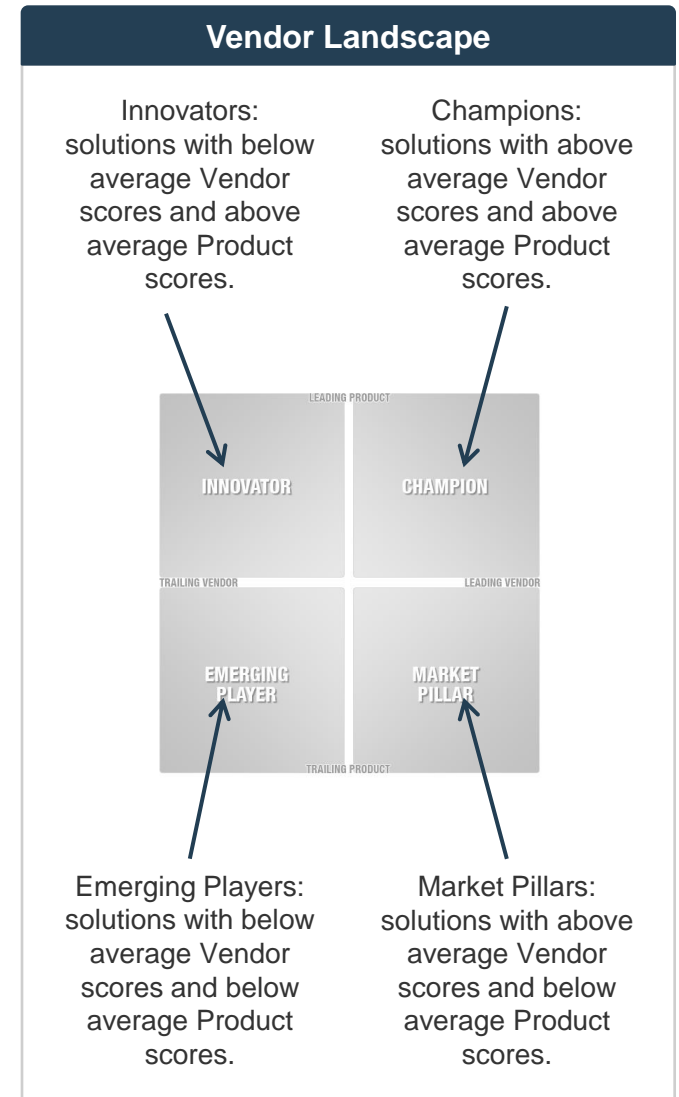
Scores out of ten, known as Raw scores, are transposed as-is into Info-Tech's Vendor Landscape Shortlist Tool, which automatically determines Vendor Landscape positioning (see Vendor Landscape Methodology: Information Presentation - Vendor Landscape, below), Criteria Score (see Vendor Landscape Methodology: Information Presentation - Criteria Score, below), and Value Index (see Vendor Landscape Methodology: Information Presentation - Value Index, below).

Vendor Landscape Methodology: Information Presentation – Vendor Landscape

Info-Tech's Vendor Landscape is a two-by-two matrix that plots solutions based on the combination of Product score and Vendor score. Placement is not determined by absolute score, but instead by relative score. Relative scores are used to ensure a consistent view of information and to minimize dispersion in nascent markets, while enhancing dispersion in commodity markets to allow for quick visual analysis by clients.

Relative scores are calculated as follows:

1. Raw scores are transposed into the Info-Tech Vendor Landscape Shortlist Tool (for information on how Raw scores are determined, see Vendor Landscape Methodology: Scoring, above).
2. Each individual criterion Raw score is multiplied by the pre-assigned weighting factor for the Vendor Landscape in question. Weighting factors are determined prior to the evaluation process to eliminate any possibility of bias. Weighting factors are expressed as a percentage such that the sum of the weighting factors for the Vendor criteria (Viability, Strategy, Reach, Channel) is 100% and the sum of the Product criteria (Features, Usability, Affordability, Architecture) is 100%.
3. A sum-product of the weighted Vendor criteria scores and of the weighted Product criteria scores is calculated to yield an overall Vendor score and an overall Product score.
4. Overall Vendor scores are then normalized to a 20 point scale by calculating the arithmetic mean and standard deviation of the pool of Vendor scores. Vendors for whom their overall Vendor score is higher than the arithmetic mean will receive a normalized Vendor score of 11-20 (exact value determined by how much higher than the arithmetic mean their overall Vendor score is), while vendors for whom their overall Vendor score is lower than the arithmetic mean will receive a normalized Vendor score of between one and ten (exact value determined by how much lower than the arithmetic mean their overall Vendor score is).
5. Overall Product score is normalized to a 20 point scale according to the same process.
6. Normalized scores are plotted on the matrix, with Vendor score being used as the x-axis, and Product score being used as the y-axis.

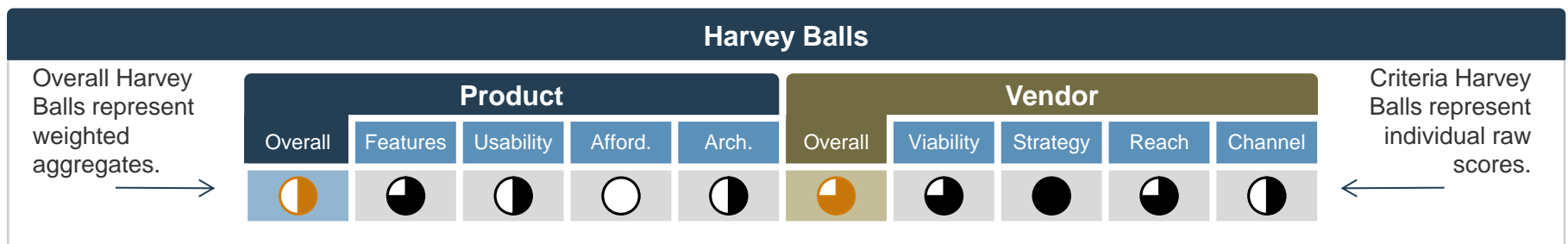


Vendor Landscape Methodology: Information Presentation – Criteria Scores (Harvey Balls)

Info-Tech’s criteria scores are visual representations of the absolute score assigned to each individual criterion, as well as of the calculated overall vendor and product scores. The visual representation used is Harvey Balls.

Harvey Balls are calculated as follows:

1. Raw scores are transposed into the Info-Tech Vendor Landscape Shortlist Tool (for information on how raw scores are determined, see Vendor Landscape Methodology: Scoring, above).
2. Each individual criterion raw score is multiplied by a pre-assigned weighting factor for the Vendor Landscape in question. Weighting factors are determined prior to the evaluation process, based on the expertise of the Senior or Lead Research Analyst, to eliminate any possibility of bias. Weighting factors are expressed as a percentage, such that the sum of the weighting factors for the vendor criteria (Viability, Strategy, Reach, Channel) is 100%, and the sum of the product criteria (Features, Usability, Affordability, Architecture) is 100%.
3. A sum-product of the weighted vendor criteria scores and of the weighted product criteria scores is calculated to yield an overall vendor score and an overall product score.
4. Both overall vendor score / overall product score, as well as individual criterion raw scores are converted from a scale of one to ten to Harvey Ball scores on a scale of zero to four, where exceptional performance results in a score of four and poor performance results in a score of zero.
5. Harvey Ball scores are converted to Harvey Balls as follows:
 - A score of four becomes a full Harvey Ball.
 - A score of three becomes a three-quarter full Harvey Ball.
 - A score of two becomes a half-full Harvey Ball.
 - A score of one becomes a one-quarter full Harvey Ball.
 - A score of zero becomes an empty Harvey Ball.
6. Harvey Balls are plotted by solution in a chart where rows represent individual solutions and columns represent overall vendor / overall product, as well as individual criteria. Solutions are ordered in the chart alphabetically by vendor name.



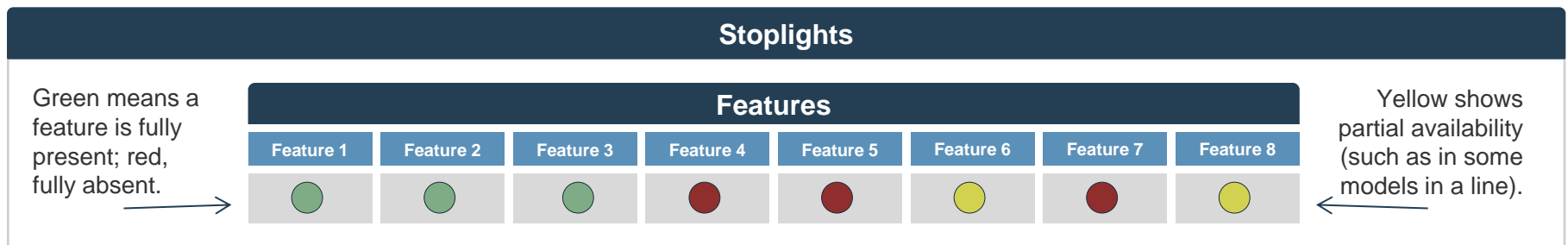
Vendor Landscape Methodology: Information Presentation – Feature Ranks (Stoplights)

Info-Tech's Feature Ranks are visual representations of the presence/availability of individual features that collectively comprise the Features' criteria. The visual representation used is stoplights.

Stoplights are determined as follows:

1. A single point is assigned to each evaluated feature that is regarded as being fully present, partial points to each feature that is partially present, and zero points to features that are deemed to be fully absent or unsatisfactory.
 - Fully present means all aspects and capabilities of the feature as described are in evidence.
 - Fully absent means all aspects and capabilities of the feature as described are missing or lacking.
 - Partially present means some, but not all, aspects and capabilities of the feature as described are in evidence, **OR** all aspects and capabilities of the feature as described are in evidence, but only for some models in a line.
2. Feature scores are converted to stoplights as follows:
 - Full points become a green light.
 - Partial points become a yellow light.
 - Zero points become a red light.
3. Stoplights are plotted by solution in a chart where rows represent individual solutions and columns represent individual features. Solutions are ordered in the chart alphabetically by vendor name.

For example, a set of applications is being reviewed and a feature of “*Integration with Mobile Devices*” that is defined as “*availability of dedicated mobile device applications for iOS, Android, and BlackBerry devices*” is specified. Solution A provides such apps for all listed platforms and scores “green,” solution B provides apps for iOS and Android only and scores “yellow,” while solution C provides mobile device functionality through browser extensions, has no dedicated apps, and so scores “red.”



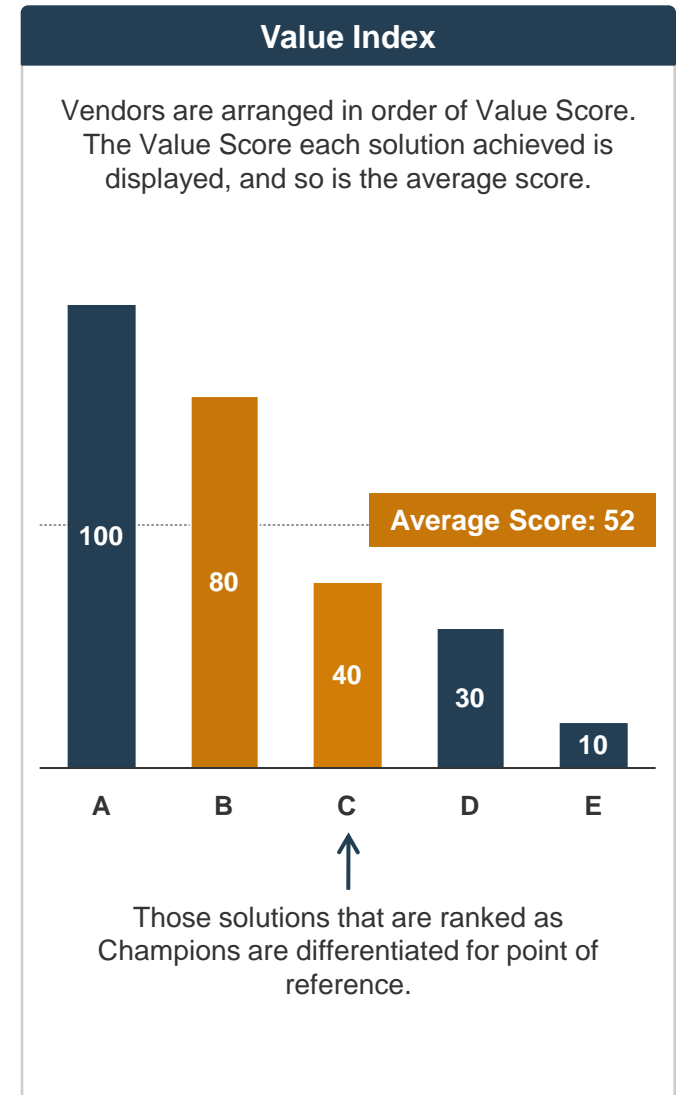
Vendor Landscape Methodology: Information Presentation – Value Index

Info-Tech's Value Index is an indexed ranking of solution value per dollar as determined by the raw scores assigned to each criteria (for information on how raw scores are determined, see Vendor Landscape Methodology: Scoring, above).

Value scores are calculated as follows:

1. The Affordability criterion is removed from the overall product score and the remaining product score criteria (Features, Usability, Architecture) are reweighted so as to retain the same weightings relative to one another, while still summing to 100%. For example, if all four product criteria were assigned base weightings of 25%, for the determination of the Value Score, Features, Usability, and Architecture would be reweighted to 33.3% each to retain the same relative weightings while still summing to 100%.
2. A sum-product of the weighted vendor criteria scores and of the reweighted product criteria scores is calculated to yield an overall vendor score and a reweighted overall Product score.
3. The overall vendor score and the reweighted overall product score are then summed, and this sum is multiplied by the Affordability raw score to yield an interim Value Score for each solution.
4. All interim Value Scores are then indexed to the highest performing solution by dividing each interim Value Score by the highest interim Value Score. This results in a Value Score of 100 for the top solution and an indexed Value Score relative to the 100 for each alternate solution.
5. Solutions are plotted according to Value Score, with the highest score plotted first, and all remaining scores plotted in descending numerical order.

Where pricing is not provided by the vendor and public sources of information cannot be found, an Affordability raw score of zero is assigned. Since multiplication by zero results in a product of zero, those solutions for which pricing cannot be determined receive a Value Score of zero. Since Info-Tech assigns a score of zero where pricing is not available, it is always in the vendor's best interest to provide accurate and up to date pricing. In the event that insufficient pricing is available to accurately calculate a Value Index, Info-Tech will omit it from the Vendor Landscape.



Vendor Landscape Methodology: Information Presentation – Price Evaluation

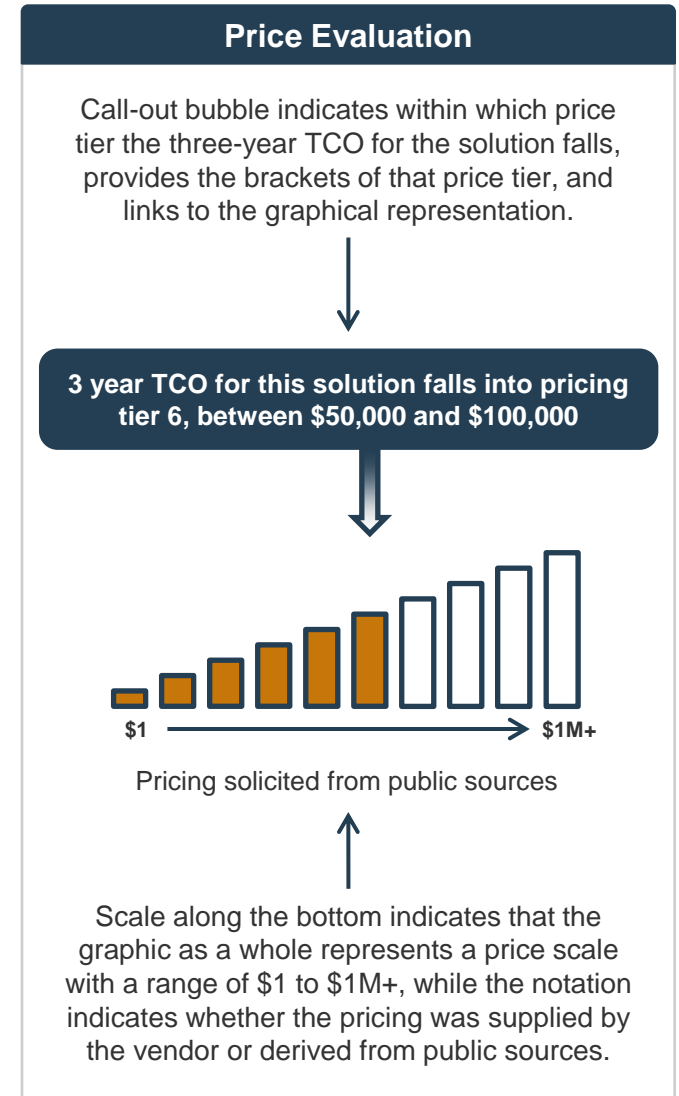
Info-Tech's Price Evaluation is a tiered representation of the three-year Total Cost of Ownership (TCO) of a proposed solution. Info-Tech uses this method of communicating pricing information to provide high-level budgetary guidance to its end-user clients while respecting the privacy of the vendors with whom it works. The solution TCO is calculated and then represented as belonging to one of ten pricing tiers.

Pricing tiers are as follows:

1. Between \$1 and \$2,500
2. Between \$2,500 and \$5,000
3. Between \$5,000 and \$10,000
4. Between \$10,000 and \$25,000
5. Between \$25,000 and \$50,000
6. Between \$50,000 and \$100,000
7. Between \$100,000 and \$250,000
8. Between \$250,000 and \$500,000
9. Between \$500,000 and \$1,000,000
10. Greater than \$1,000,000

Where pricing is not provided, Info-Tech makes use of publicly available sources of information to determine a price. As these sources are not official price lists, the possibility exists that they may be inaccurate or outdated, and so the source of the pricing information is provided. Since Info-Tech publishes pricing information regardless of vendor participation, it is always in the vendor's best interest to supply accurate and up to date information.

Info-Tech's Price Evaluations are based on pre-defined pricing scenarios (see Product Pricing Scenario, below) to ensure a comparison that is as close as possible between evaluated solutions. Pricing scenarios describe a sample business and solicit guidance as to the appropriate product/service mix required to deliver the specified functionality, the list price for those tools/services, as well as three full years of maintenance and support.



Vendor Landscape Methodology: Information Presentation – Scenarios

Info-Tech's Scenarios highlight specific use cases for the evaluated solution to provide as complete (when taken in conjunction with the individual written review, Vendor Landscape, Criteria Scores, Feature Ranks, and Value Index) a basis for comparison by end-user clients as possible.

Scenarios are designed to reflect tiered capability in a particular set of circumstances. Determination of the Scenarios in question is at the discretion of the analyst team assigned to the research project. Where possible, Scenarios are designed to be mutually exclusive and collectively exhaustive, or at the very least, hierarchical such that the tiers within the Scenario represent a progressively greater or broader capability.

Scenario ranking is determined as follows:

1. The analyst team determines an appropriate use case.
For example:
 - Clients that have multinational presence and require vendors to provide four-hour onsite support.
2. The analyst team establishes the various tiers of capability.
For example:
 - Presence in Americas
 - Presence in EMEA
 - Presence in APAC
3. The analyst team reviews all evaluated solutions and determines which ones meet which tiers of capability.
For example:
 - Presence in Americas – Vendor A, Vendor C, Vendor E
 - Presence in EMEA – Vendor A, Vendor B, Vendor C
 - Presence in APAC – Vendor B, Vendor D, Vendor E
4. Solutions are plotted on a grid alphabetically by vendor by tier. Where one vendor is deemed to be stronger in a tier than other vendors in the same tier, they may be plotted non-alphabetically.
For example:
 - Vendor C is able to provide four-hour onsite support to 12 countries in EMEA while Vendors A and B are only able to provide four-hour onsite support to eight countries in EMEA; Vendor C would be plotted first, followed by Vendor A, then Vendor B.

Analysts may also elect to list only the most Exemplary Performers for a given use case. One to three vendors will appear for each of these purchasing scenarios with a brief explanation as to why we selected them as top-of-class.

Vendor Landscape Methodology: Information Presentation – Vendor Awards

At the conclusion of all analyses, Info-Tech presents awards to exceptional solutions in three distinct categories. Award presentation is discretionary; not all awards are extended subsequent to each Vendor Landscape and it is entirely possible, though unlikely, that no awards may be presented.

Awards categories are as follows:

- **Champion Awards** are presented to those solutions, and only those solutions, that land in the Champion zone of the Info-Tech Vendor Landscape (see Vendor Landscape Methodology: Information Presentation - Vendor Landscape, above). If no solutions land in the Champion zone, no Champion Awards are presented. Similarly, if multiple solutions land in the Champion zone, multiple Champion Awards are presented.
- **Trend Setter Awards** are presented to those solutions, and only those solutions, that are deemed to include the most original/inventive product/service, or the most original/inventive feature/capability of a product/service. If no solution is deemed to be markedly or sufficiently original/inventive, either as a product/service on the whole or by feature/capability specifically, no Trend Setter Award is presented. Only one Trend Setter Award is available for each Vendor Landscape.
- **Best Overall Value Awards** are presented to those solutions, and only those solutions, that are ranked highest on the Info-Tech Value Index (see Vendor Landscape Methodology: Information Presentation – Value Index, above). If insufficient pricing information is made available for the evaluated solutions, such that a Value Index cannot be calculated, no Best Overall Value Award will be presented. Only one Best Overall Value Award is available for each Vendor Landscape.

Vendor Awards



Info-Tech's **Champion Award** is presented to solutions in the Champion zone of the Vendor Landscape.



Info-Tech's **Trend Setter Award** is presented to the most original/inventive solution evaluated.



Info-Tech's **Best Overall Value Award** is presented to the solution with the highest Value Index score.

Vendor Landscape Methodology: Fact Check & Publication

Info-Tech takes the factual accuracy of its Vendor Landscapes, and indeed of all of its published content, very seriously. To ensure the utmost accuracy in its Vendor Landscapes, we invite all vendors of evaluated solutions (whether the vendor elected to provide a survey and/or participate in a briefing or not) to participate in a process of fact check.

Once the research project is complete and the materials are deemed to be in a publication ready state, excerpts of the material specific to each vendor's solution are provided to the vendor. Info-Tech only provides material specific to the individual vendor's solution for review encompassing the following:

- All written review materials of the vendor and the vendor's product that comprise the evaluated solution.
- Info-Tech's Criteria Scores / Harvey Balls detailing the individual and overall vendor / product scores assigned.
- Info-Tech's Feature Rank / stoplights detailing the individual feature scores of the evaluated product.
- Info-Tech's Raw Pricing for the vendor either as received from the vendor or as collected from publicly available sources.
- Info-Tech's Scenario ranking for all considered scenarios for the evaluated solution.

Info-Tech does not provide the following:

- Info-Tech's Vendor Landscape placement of the evaluated solution.
- Info-Tech's Value Score for the evaluated solution.
- End-user feedback gathered during the research project.
- Info-Tech's overall recommendation in regard to the evaluated solution.

Info-Tech provides a one-week window for each vendor to provide written feedback. Feedback must be corroborated (be provided with supporting evidence), and where it does, feedback that addresses factual errors or omissions is adopted fully, while feedback that addresses opinions is taken under consideration. The assigned analyst team makes all appropriate edits and supplies an edited copy of the materials to the vendor within one week for final review.

Should a vendor still have concerns or objections at that time, they are invited to a conversation, initially via email, but as required and deemed appropriate by Info-Tech, subsequently via telephone, to ensure common understanding of the concerns. Where concerns relate to ongoing factual errors or omissions, they are corrected under the supervision of Info-Tech's Vendor Relations personnel. Where concerns relate to ongoing differences of opinion, they are again taken under consideration with neither explicit nor implicit indication of adoption.

Publication of materials is scheduled to occur within the six weeks immediately following the completion of the research project, but does not occur until the fact check process has come to conclusion, and under no circumstances are "pre-publication" copies of any materials made available to any client.

Product Pricing Scenario

Info-Tech Research Group is providing each vendor with a common pricing scenario to enable normalized scoring of Affordability, calculation of Value Index rankings, and identification of the appropriate solution pricing tier as displayed on each vendor scorecard.

Vendors are asked to provide list costs for Server Virtualization software licensing to address the needs of a reference organization described in the pricing scenario. **Please price out the lowest possible three-year Total Cost of Ownership (TCO) including list prices for software and licensing fees to meet the requirements of the following scenario.**

Three-year total acquisition costs will be normalized to produce the Affordability raw scores and calculate Value Index ratings for each solution.

The pricing scenario:

A six-site organization with 2,200 employees, located in the US and India. The four US locations create software to be used internally while the two locations in India are focused on externally facing applications, including mobile solutions. This company is a consumer goods manufacturer with HQ in the US.

While the teams work well together, projects are often seen as chaotic when crossing geographic boundaries.

The corporate development group has determined that implementing ALM consistently across all locations and projects would greatly improve the overall efficiency of the collective development group.

The corporate development group would like to create visibility for the corporate stakeholders into all projects being executed with real-time (or near real-time) access to reports. Reports should be filtered by project, by development group, and be accessible through tablet devices and web browsers.

Development projects are typically run with an Agile approach, following two-week sprints for most projects.

Product Pricing Scenario, continued

The expected solution capabilities are as follows:

Users

- 2 developers at each location in the US and 3 developers at each location in India
- 1 tester at each location in both US and India.
- Centralized IT team, of 5 individuals, in the US responsible for all deployment and support across the organization.
- 1 scrum master at each location in both US and India.
- 2 solution architects in the US responsible for all design and architecture.
- 3 product owners in the US overseeing the evolution of the following:
 - CRM software: SaaS-based Salesforce.com solution
 - Marketing software: Custom software
 - Supply chain software: Custom software

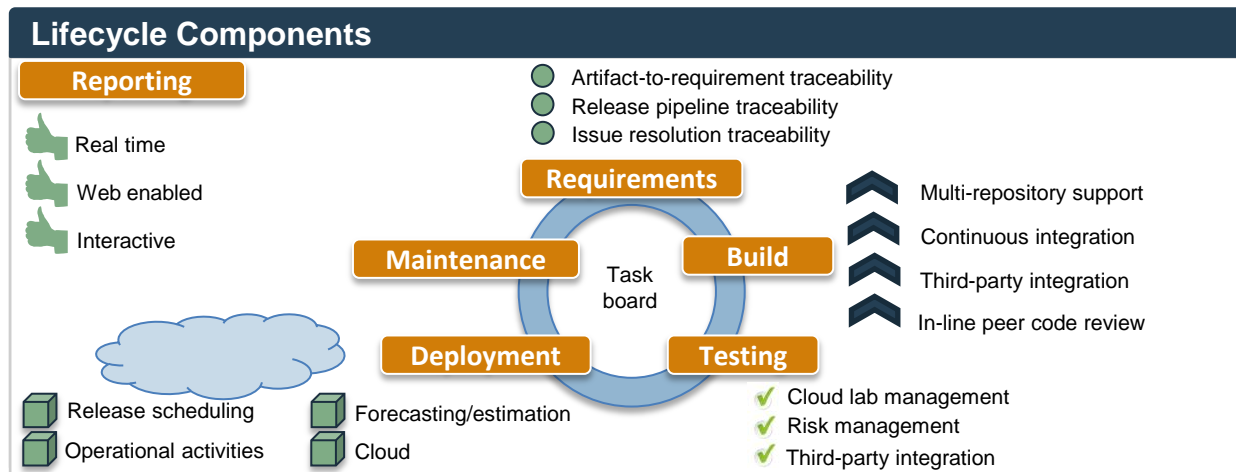
Development, Testing, and Deployment Processes

- Display impact analysis of requirements changes.
- Permit multi-user source code management with branching, tagging, and merging.
- Trace test results to test cases and requirements or issues.
- Provide continuous integration build as developers check in code.
- Automate testing of latest build and provide release management into production.
- Provide central repository for storing use cases and other development artifacts.

Project Management

- Provide development stakeholders with status of current sprint tasks.
- Trace current sprint tasks to higher level requirements and software issues.
- Display backlog of potential future sprint tasks.
- Automated Agile workflow that moves to the next stage as users complete the current stage.
- Display dashboards showing the health of current sprint (burndown, bug count).

Reference Diagram



This slide is included for reference purposes. It outlines the full breadth of features and components that we considered for this particular visualization. Use this diagram to compare each vendor's ALM offering.