

# Ovum Decision Matrix: Selecting an Agile Project Management Solution, 2016–17

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Application lifecycle management for enterprise IT, regulated, and multi-speed environments

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## Summary

### Catalyst

Ovum has split its coverage of application lifecycle management (ALM) solutions between those that cater comprehensively for enterprise IT, regulated environments, and software-rich engineered product manufacturing (see companion ALM ODM 2016–2017) and a subset (the focus here) based on the first two (enterprise IT and regulated environments) also described as agile project management. The use of the term agile is to represent the strong influence that agile practices have in the enterprise space, but does not exclude managing traditional style, custom, and hybrid project processes. Large organizations will typically have a mix of project process needs, resulting in a multi-speed development environment, because the speed (or cadence) of software delivery varies. Agile project management solutions are ideal for enterprise IT departments and business units developing software, and also regulated environments where processes need to be managed in a disciplined way. While the technology coverage of this ODM is a subset of the ALM ODM, the feature category weightings are different between the ODMs (see Methodology).

### Ovum view

ALM has traditionally been a best-of-breed buy recommendation, but the industry never agreed on a standard way of interoperating the different vendor solutions, so the result was that the promise of ALM was rarely achieved. The promise was “the sum is greater than the individual parts”, meaning real-time end-to-end traceability, visibility, and collaboration. Without tight integration it is not possible to achieve end-to-end traceability. For small agile teams working in a room, where you can ask a team member a question about some work asset directly, this may be less of an issue, although with staff turnover and maintenance development, traceability automation reduces effort. However, when you have a few thousand developers on a project, with the steering team in one country and the development teams spread around rest of the globe, end-to-end traceability becomes a vital part of managing a project.

Ovum has added to its ALM adoption recommendations the option to rip-and-replace and standardize on a single ALM solution enterprise-wide. If possible, suppliers and partners should also be moved to the same standard. If the project has sufficient importance and value, suppliers will standardize to win the business. This advice may appear unusual, but many software projects are highly time-sensitive so delivering quickly to market becomes essential to gain the business. In these circumstances the friction that tool mismatch introduces becomes a significant impediment to rapid delivery. This does not mean that developers cannot choose the best tools for the job. On the contrary, developers should continue to have the freedom to choose core development tools. However, the management of projects standardized on a single ALM solution may be the right choice where speed to market is of the essence.

Of course some organizations will not be able to achieve such standardization, and in these cases the integration hubs provided by OpsHub and Tasktop will help to connect a heterogeneous tool environment. In addition, ALM solutions typically have out-of-the-box connectors to best-of-breed tools within the ALM ecosystem. As long as an organization also uses this set of solutions and these connectors have bi-directional read and write capabilities, end-to-end traceability is possible. Our

advice is to consider all the options and choose the one that is right and cost-effective for the needs of your organization.

One major difference between enterprises and manufacturing is that DevOps is having a huge impact on the former, whereas it is virtually unknown in the latter. From a tooling perspective, DevOps emphasizes automation over manual activity and this is seen in new-generation release-management solutions. Here the topic of release management is only dealt with at a high level, but DevOps is dealt with in depth in the companion report ODM: DevOps Release Management 2016-2017. With our prediction of DevOps hitting the mainstream in 2016-2017, we expect the next generation of agile project management solutions to embrace DevOps to a greater extent. There is already evidence of this in some solutions on the market.

## Key findings

- The ALM market is continuing to grow, with new players, both small and large IT vendors, emerging.
- The opportunities in ALM are growing in tandem with the digital transformation taking place in businesses.
- More businesses rely on software than ever before and ALM is necessary to manage its development, whether built in-house or sourced from suppliers.
- Agile development has become the norm but large enterprises typically continue to maintain legacy systems using traditional/waterfall processes, and therefore have multi-speed project needs.
- DevOps is a huge IT wave that has now reached the attention of the late majority on the adoption diffusion curve.
- The influence of DevOps on ALM is likely to result in the integration of release management into ALM (examples already exist).
- Using an integrated holistic ALM solution is the best way to benefit from the promise of ALM, which includes real-time end-to-end traceability, project visibility, and team collaboration.
- Ovum no longer sees source version control as an essential tool within ALM. It is a field now dominated by free open source tools and we expect ALM solutions to integrate with the leading tools.
- Ovum believes that support for the software security development lifecycle is now essential in an ALM solution. Applications need to be secure from within as they traverse networks and firewalls.
- ALM solutions are invariably accessed via web browsers and vendors typically offer hosted and on-premise solutions.
- There is evidence that Scaled Agile Framework (SAFe) is gaining support from more vendors than before.

## Market and solution analysis

### Ovum Decision Matrix: Agile Project Management, 2016–17

An ALM solution for enterprise IT and regulated environments combines the top-level segments of the development lifecycle, including requirements management, QA and test management, application project portfolio management, project management, and release management (see Figure 1). We expect an ALM solution to integrate with the popular source code version control solutions on the market (Ovum will cover the topic of change and configuration management in a separate future report). Release management has expanded considerably as a result of DevOps and continuous delivery, and the companion ODM on the topic is testament to the evolution of this field. In the longer term, it is likely that ALM and DevOps release management solutions will merge into a holistic offering, and some solutions already do this.

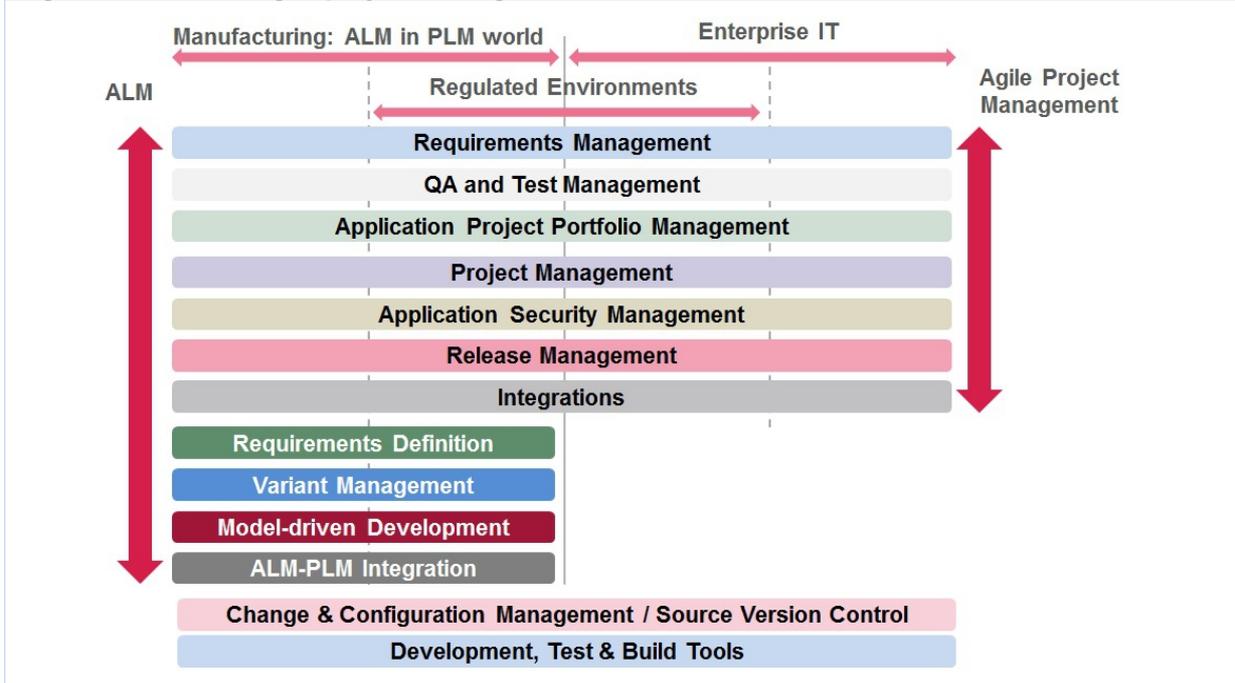
Security has become a key issue for organizations as a result of the ease with which hackers can breach a data center. The Internet was built on software coded in C but this is the weakest language from a security viewpoint. The problem of security is therefore as pervasive as the Internet for multiple reasons. To tackle the problem of software security, we expect an ALM solution to provide out-of-the-box support for the software security development lifecycle. At a minimum we believe this should involve supplying connectors to popular static and dynamic security code scanning tools. The ALM solution should in addition auto-populate defect-tracking systems for raised security issues, provide impact analysis of security issues, provide risk assessments and prioritization of security issues, and offer security assessment reporting. Vendors found this the most difficult category of the ODM evaluation to score, with more vendors offering no feature at all than any other category.

Agile methodologies have become the default mode of development in many organizations, and certainly in the high-technology industry. However, many organizations struggle to scale up agile to large projects and end up turning to SAFe for guidance. SAFe operates at three tiers: team, program, and portfolio. Enterprise users of SAFe transitioning to scaled agile and with modest agile experience typically only implement to the second tier. Implementing all three tiers concurrently implies an existing high level of agile maturity within the organization, which is the exception rather than the rule. However, SAFe is helpful because it encapsulates all the agile practices of the last two decades that are proven to be useful, and does so in the context of scaled up projects.

#### **Agile project management vendor comparisons: ODM results**

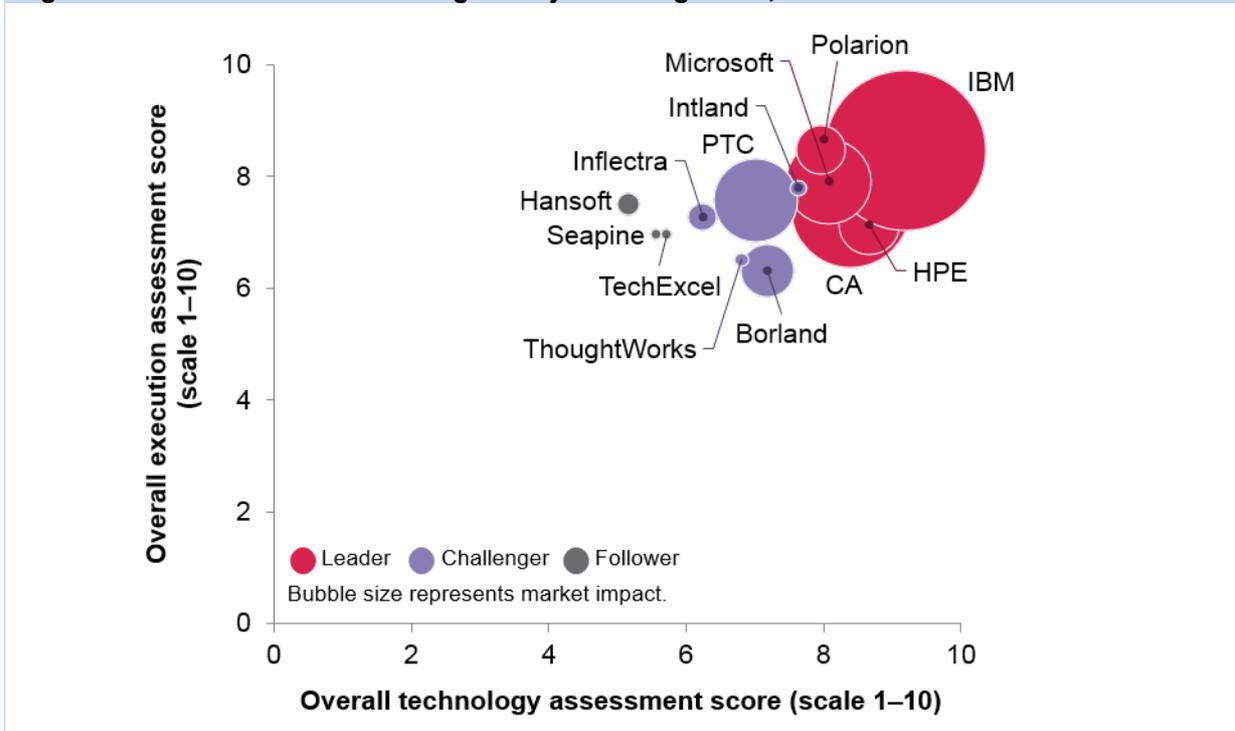
Ovum invited ALM vendors to participate in the ODM based on criteria (see Vendor Inclusion section). Vendor solutions are assessed on three dimensions: technology features, market execution, and market impact. The methodology behind these ODM dimensions is given in the ODM Methodology section. The three dimensions of the ODM are combined in a bubble chart (Figure 2) and with an expanded view (Figure 3).

**Figure 1: ALM and agile project management as defined in the ODM**



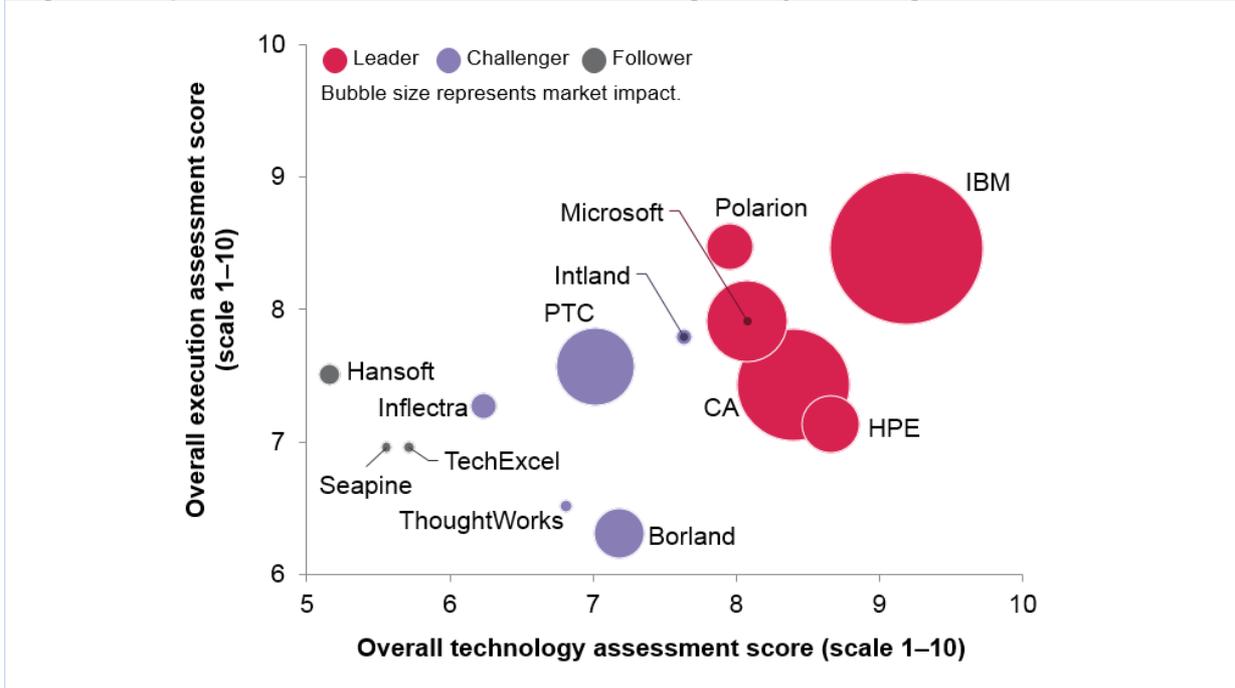
Source: Ovum

**Figure 2: Ovum Decision Matrix: Agile Project Management, 2016–17**



Source: Ovum

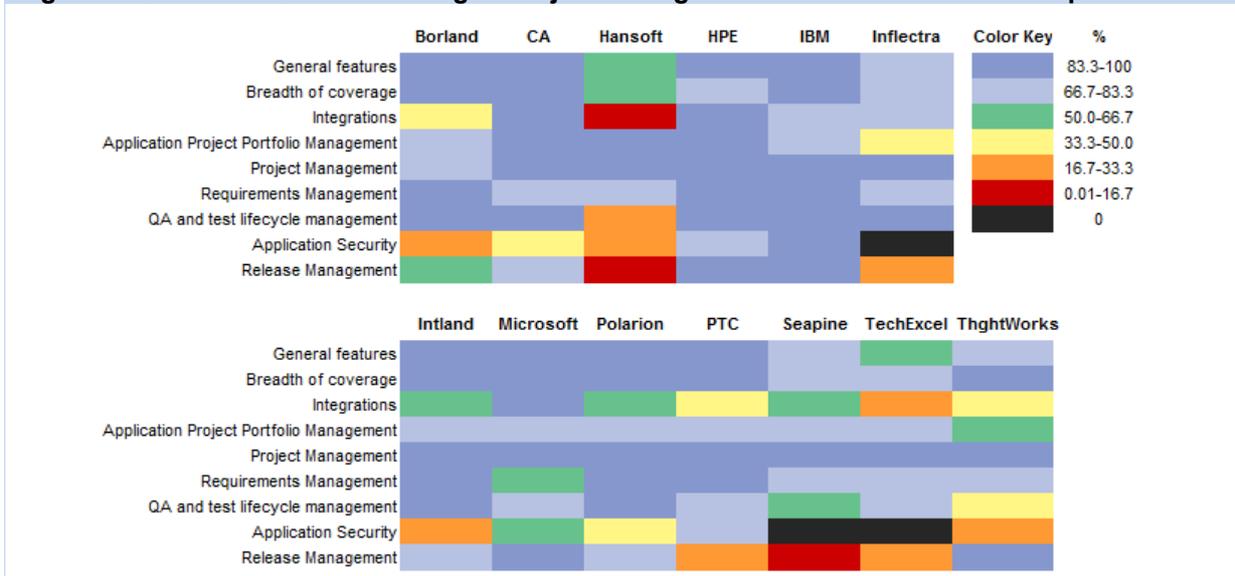
**Figure 3: Expanded view of Ovum Decision Matrix: Agile Project Management, 2016–17**



Source: Ovum

The Ovum Rainbow Map (see Figure 4) provides a view of how well vendors scored in the technology dimension by feature category. In the rainbow map, the violet end of the spectrum scores highest and the red end scores lowest, with black representing no capability present at all.

**Figure 4: Ovum Decision Matrix: Agile Project Management 2016-2017 Rainbow Map**



Source: Ovum

## Ovum ratings

The ALM vendors are ranked into three types as follows:

- **Market leader** : This category represents the leading solutions that we believe are worthy of a place on most technology selection shortlists. The vendor has established a commanding market position with a product that is widely accepted as best of breed.
- **Market challenger** : The solutions in this category have good market positioning and are selling and marketing the product well. The products offer competitive functionality and a good price-performance proposition, and should be considered as part of the technology selection.
- **Market follower** : Solutions in this category are typically aimed at meeting the requirements of a particular kind of customer. As a tier-1 offering, they should be explored as part of the technology selection.

**Table 1: Ovum Decision Matrix: Agile Project Management 2016-2017**

| Market leaders  | Market challengers    | Market followers |
|-----------------|-----------------------|------------------|
| CA Technologies | Inflectra             | Hansoft          |
| HPE             | Intland               | Seapine          |
| IBM             | Micro Focus (Borland) | TechExcel        |
| Microsoft       | PTC                   |                  |
| Polarion        | ThoughtWorks          |                  |

Source: Ovum

On the basis of the types of ranking, Ovum's results for the Agile Project Management ODM 2016-2017 are given in Table 1.

## Market leaders: vendor solutions

The market leaders have excelled in both the technical features they offer and in how well they execute in the market. Ovum has reviewed vendors of different sizes and maturity and their different impact in the market, and all the leaders performed highly in meeting the needs of ALM for enterprise IT and the disciplined processes in regulated environments. This involves offering a solution that is suitable for managing multi-speed environments where the solutions must be agnostic to traditional, custom, hybrid, or the most advanced agile and DevOps practices.

CA Technologies is a new player in the ALM market by way of both new home-grown products, in particular CA Application Lifecycle Conductor (CALC) and acquisitions. The Rally Software acquisition, whose key solution was renamed CA Agile Central (CAAC), introduces a well-established product to the CA portfolio. CAAC can support multi-speed development environments, and is particularly strong in supporting agile and lean development processes. CALC offers connector technology that simplifies building and configuring connections spanning CA portfolio tools to selected third-party tools out of the box.

HPE has many years' experience of developing and evolving its home-grown ALM solution for enterprise IT and regulated environments. HPE ALM and HPE Agile Manager are two separate products that combine to cover multi-speed environments, with the former designed for traditional/waterfall development and the latter for agile, lean, and DevOps projects. HPE's solution can also leverage the considerable QA and test capabilities in the HPE portfolio.

IBM has been a leading vendor in the ALM space for many years and has a strong presence in both enterprise IT and in engineering industrial sectors. IBM understood the need for an ALM approach in

software development from the time when the concept first emerged, and before many other ALM vendors recognized the opportunity. Today IBM offers the most complete ALM portfolio of tools, designed to address every type of market and provide speed of development and delivery.

Microsoft in Visual Studio perfected the art of integrated development environments and built Team Foundation Server (TFS) on top. This was one of the earliest examples of a holistic and integrated ALM solution. Microsoft TFS is present in all industries and environments and can support projects of different delivery speeds.

Polarion has grown over the years, offering an integrated ALM solution to the mechatronics specialist space, as well as enterprise IT and regulated environments. Its recognition of the importance of ALM-PLM integration resulted in investment from Siemens and its subsequent acquisition by the company. Given the huge customer base within Siemens, this represents an excellent opportunity because software content in engineered products is increasing and more projects need ALM solutions.

## Market challengers: vendor solutions

The market challengers include a mix of vendors with solutions that could evolve to the leader category. They include relatively small vendors including Inflectra, Intland, and ThoughtWorks, to large ones such as Micro Focus (Borland) and PTC.

Micro Focus (Borland) is a large public company based in the UK and offers the Borland suite of ALM products, as well as the Silk test tool portfolio, both of which are well established in the market. The solution comprises lifecycle segment tools integrated by the Borland connector technology. Micro Focus is being challenged by smaller ALM vendors with integrated, holistic ALM solutions.

Inflectra, a private company based in the US, is dedicated to ALM with a strong focus on an integrated holistic ALM solution that is also affordable. The company has a strong focus on customer support. Inflectra belongs to a new generation of ALM vendor challenging better known brands.

Intland is a relatively new entrant to the ALM space but recognized from the outset the opportunity in engineering manufacturing. The rise of software content in engineered products has helped grow this part of the ALM market and helped propel Intland and its business process automation approach to the front line of ALM vendors. Ovum was impressed by Intland and this is the first time the company appears in an ODM. It appears as a leader in the ALM ODM 2016-2017 and narrowly misses leader in this APM ODM.

PTC became an ALM vendor with the acquisition of MKS, and was the first leading PLM vendor to make an ALM acquisition. The company is now transitioning to be a major Internet of Things vendor, and ALM continues to play a role as the means of managing the content that goes into devices and machines. PTC's ALM solution is principally targeted at the manufacturing space, but this is a growth market and offers excellent opportunities.

ThoughtWorks is a respected name in the agile community, and is a leading consultancy for agile and DevOps-related projects. Its tools have been influential in pushing the automation available to developers, including donating free and open source tools to the community. Its premium tools are designed to add enterprise-level management capabilities not available in the open source versions.

## Market followers: vendor solutions

The market followers are all vendors that have achieved recognition as major ALM players in the market and that have a significant presence in certain industries. Hansoft, Seapine, and TechExcel all have holistic integrated ALM solutions and will challenge all the ALM vendors in this ODM with solutions that meet many of the needs of enterprise and regulated environments.

## Emerging vendors

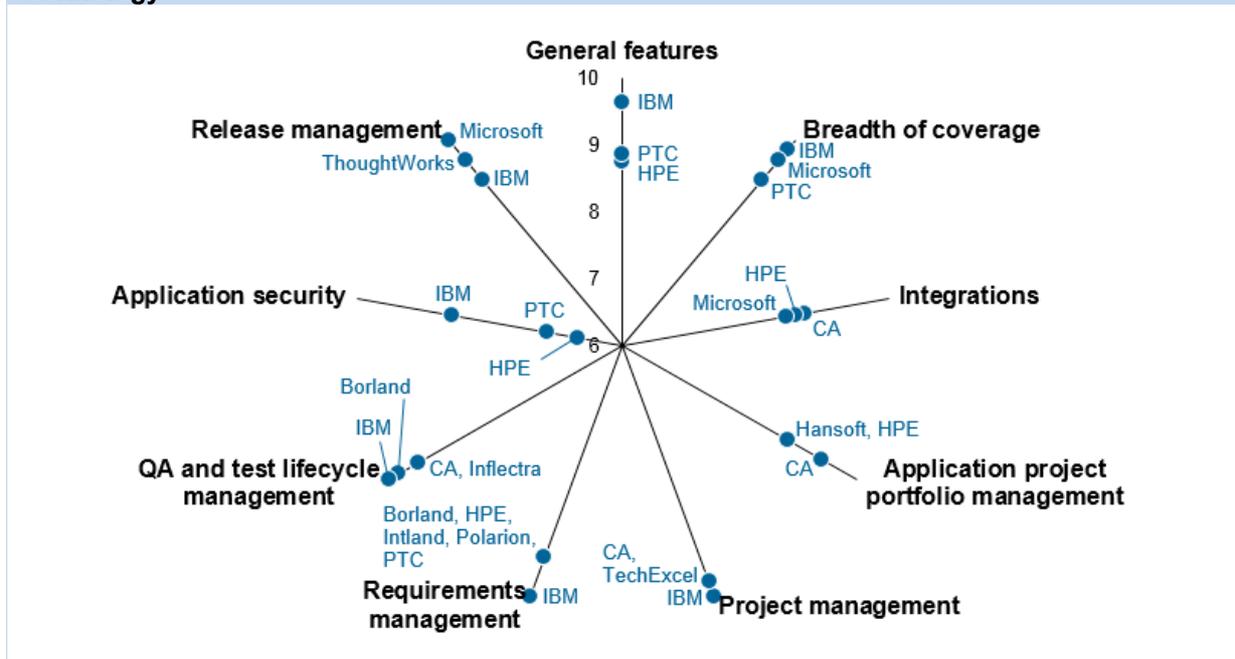
There remain a number of ALM vendors that have not made it into this ODM. For example, Atlassian appeared in the ALM ODM 2013-2014 but declined to participate this time. The initial public offering of the company coincided with the ODM’s research phase and this was understandably a sensitive time for the company. CollabNet’s core strength is in CCM and we removed this as a category in ALM so CollabNet did not participate this time, but we expect to see CollabNet in a future CCM report.

Regarding the question of ALM tool integration, many organizations struggle to gain the benefit of ALM from their solutions because they have a mix of tools from many vendors and these typically do not interoperate well. Ovum recommends considering standardizing on a single ALM solution, while letting developers choose their core development tools (standardize at the management level but allow best-of-breed at the coal face). This is not always possible, so vendors such as OpsHub and Tasktop offer solutions that improve spot solution interoperability.

## Market leaders

### Market leaders: technology

**Figure 5: Ovum Decision Matrix: Agile Project Management 2016-2017– Market leaders – technology**

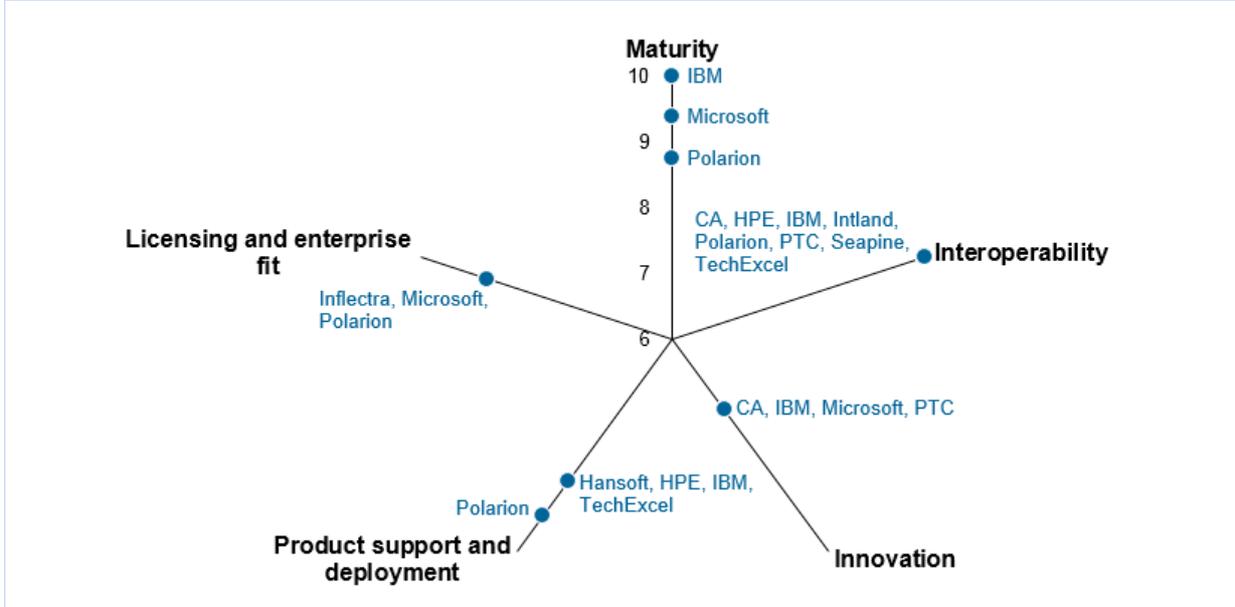


Source: Ovum

All the leaders scored above 80% in technology. IBM scored exceptionally well all round in this dimension. CA Technologies (including its recent Rally Software acquisition) and HPE were not far behind. Microsoft and Polarion also scored exceptionally well.

## Market leaders: execution

**Figure 6: Ovum Decision Matrix: Agile Project Management, 2016–17– Market leaders – execution**

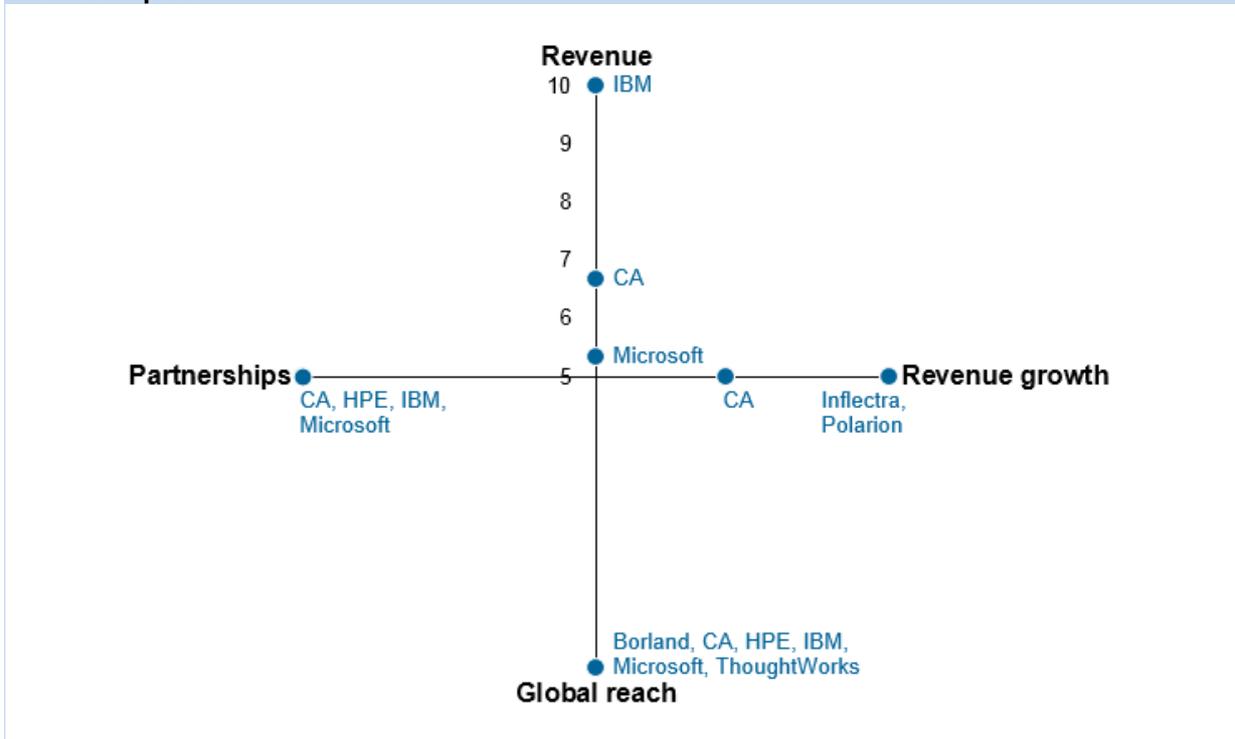


Source: Ovum

There are essentially two tiers in execution for the leaders. IBM, Microsoft, and Polarion score exceptionally well, followed by CA and HPE close behind.

## Market leaders: market impact

**Figure 7: Ovum Decision Matrix: Agile Project Management 2016-2017– Market leaders – market impact**



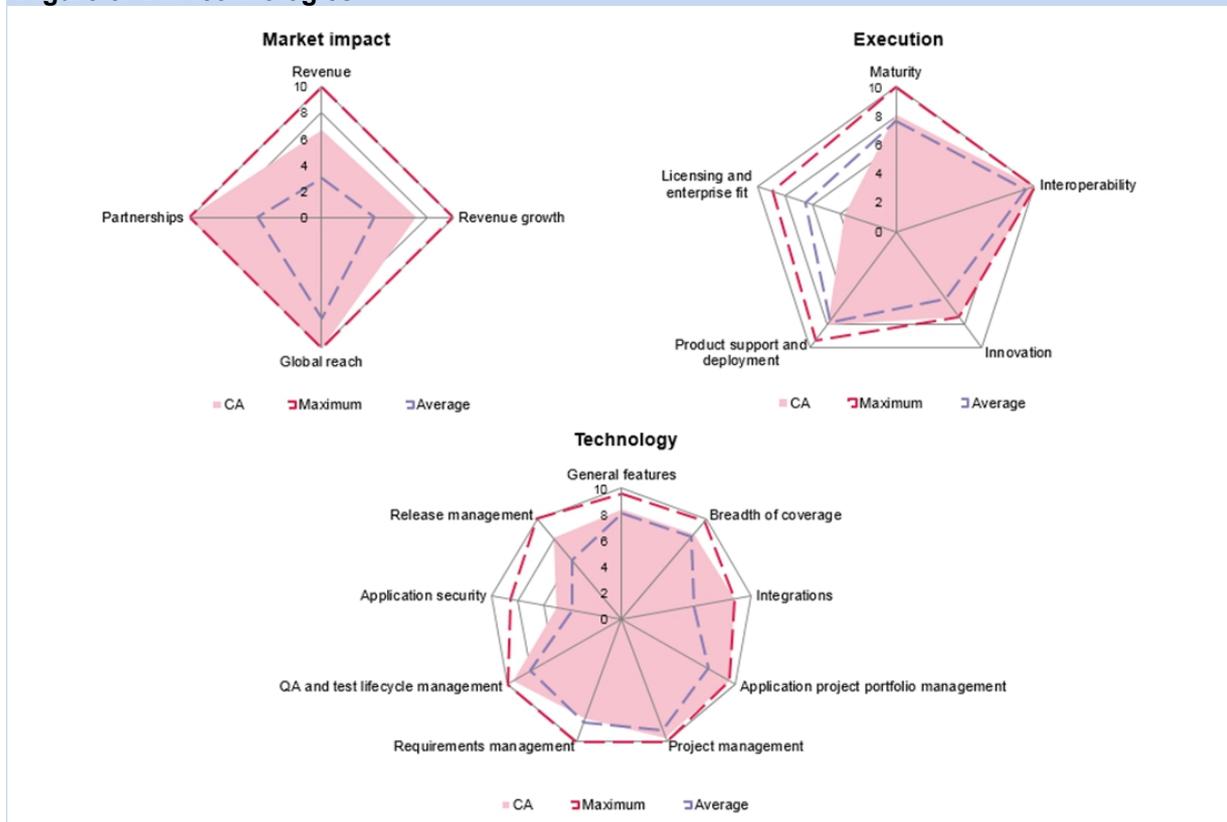
Source: Ovum

IBM is the largest vendor in the market in Ovum’s estimate of its ALM revenue. CA Technologies is second, followed by Microsoft, HPE, and Polarion.

## Vendor analysis

### CA Technologies (Ovum recommendation: leader)

Figure 8: CA Technologies



Source: Ovum

## Products

The primary products are CA Agile Central, CA Application Lifecycle Conductor, and CA Service Virtualization.

## Ovum SWOT assessment

### Strengths

#### CA offers outstanding project planning capabilities in CA Agile Central Portfolio Manager

Planning large-scale enterprise projects poses considerable challenges for the highly disciplined agile approach. Meeting delivery deadlines for technical and business milestones where multiple teams are involved requires tools that are integrated with team-level Kanban or Scrum whiteboards to elevate activity for coordination. Spreadsheets are often used for this activity, which involves manual effort and lacks auditing and security controls. CA Agile Central offers an advanced portfolio planning capability.

#### CA ALM is designed for traditional and agile styles of software development and delivery

CA tools can support a range of popular agile methodologies, including Lean/Kanban, Scrum, and Scaled Agile Framework (SAFe). Crucially, organizations are not forced to change the work methods they wish to continue, including waterfall. Agile practices can be used in the most demanding use

cases, including safety critical environments, but organizations may find that sticking with waterfall, such as, for example, on legacy mainframe maintenance work, is the least disruptive. ALM tools therefore need to support all types of work practices, including mixing traditional and agile methods.

### **CA Agile Ready>Sync>Go transformation services for scaling agile development**

CA, through what was Rally consulting, offers a transformation approach for scaling agile, with CA Agile Ready-Sync-Go. This helps organizations form agile development teams and delivery groups that can deliver responsive and sustainable value to the business.

### *Weaknesses*

#### **CA's application security support could be improved**

Given the seriousness of security breaches in organizations today and that Internet-connected applications are often the weakest link, the vendor community could make a greater effort to help end users. CA's strategy is to provide the capability to enable enterprise end users to integrate their ALM tools with their existing application security tools. We believe that ALM vendors should offer these integration features out-of-the-box at a minimum. Ideally, they should also offer a security framework and tools.

### *Opportunities*

#### **The enterprise IT market is crowded and highly competitive but CA has good prospects**

CA is making a large effort to play in the ALM market and has a good foundation on which to continue building. While the market is competitive and continually evolving, CA's breadth across the lifecycle and especially across development and operations, gives it an advantage in leveraging its considerable portfolio of tools. Ovum sees opportunities in better exploiting the CA Service Virtualization tool within ALM.

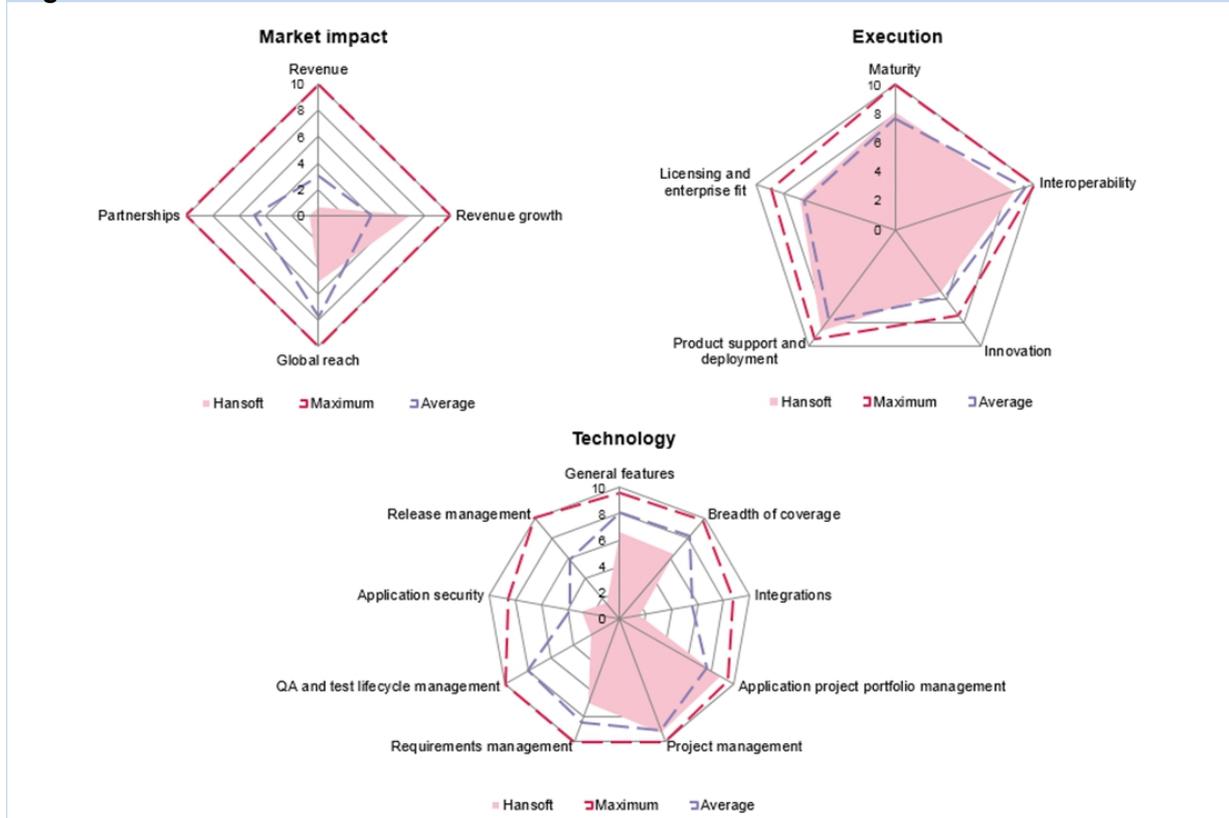
### *Threats*

#### **The next IT wave will disrupt the market but CA's depth and breadth will prove beneficial**

CA has entered the ALM market at a time when a new wave is about to disrupt it with microservices architecture (MSA) and containerization. CA's ALM solution supports these new paradigms, and we expect that as microservices grow in use, there will be a need to improve their management. The new paradigm will disrupt the enterprise IT ALM market, and we expect new solutions to emerge to help manage what could turn into microservices hell for many organizations.

## Hansoft (Ovum recommendation: follower)

Figure 9: Hansoft



Source: Ovum

### Products

The primary products are Hansoft and HansoftX.

### Ovum SWOT assessment

#### Strengths

##### Hansoft has some strong features for agile project management

Hansoft has a number of strengths that make it a good candidate for agile project management. It is versatile in the user’s choice of development methodology, supporting Scrum, SAFe, Kanban, and traditional/waterfall approaches. It performs rapidly when managing large data sets and has an in-built business intelligence system for producing agile metrics and dashboard reporting.

#### Weaknesses

##### For an agile enterprise IT ALM solution, adding release management would be useful

Release management could be further developed in the Hansoft solution. The growth in DevOps adoption, such as continuous delivery automation, has created a new market for release automation tools. Hansoft should consider providing out-of-the-box connectors to these solutions to provide a DevOps experience. Ovum believes that the level of capability expected in agile project management solutions will rise as a result of DevOps.

## Opportunities

### Hansoft has a varied client base by industry and offers a range of process templates

Hansoft has established a varied customer base, and has a particular strength in the computer games industry. It offers a range of process templates by industry to help kick-start projects. This is a good opportunity for taking Hansoft into highly regulated environments that have strict controls that need to be in place. Ovum found that Hansoft was not designed to meet the advanced needs of systems of systems development, with, for example, variant management and PLM integration, but nevertheless by teaming up with appropriate third-party tools, it can offer a useful solution in the engineering space.

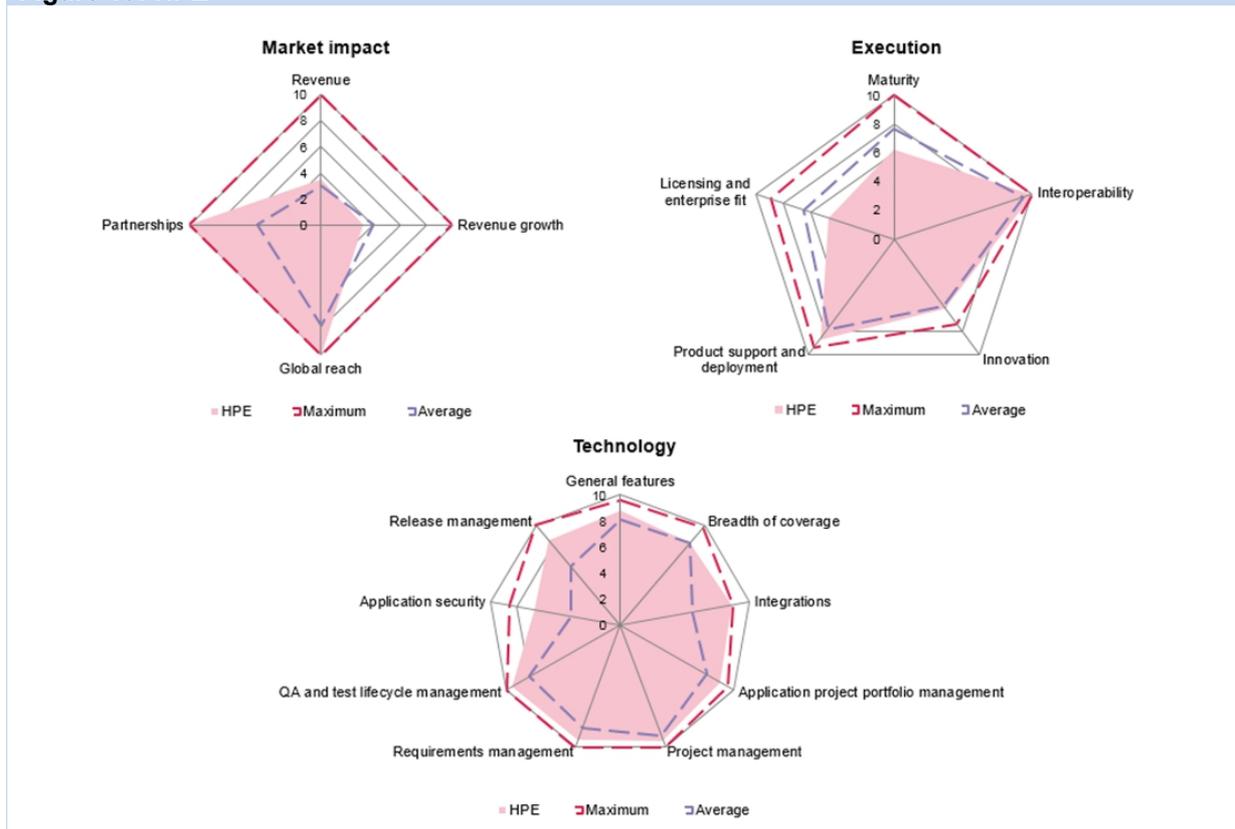
## Threats

### Hansoft is best placed to target the agile project management market

Despite being a follower in both the ALM and APM ODMs, Hansoft performed better in the latter, and Ovum believes that this is the market Hansoft should focus on to improve its standing. The market is highly competitive with some very large vendors involved, and to stand out requires being ahead of the market. Hansoft should consider the role DevOps could play in its solution.

## HPE (Ovum recommendation: leader)

Figure 10: HPE



Source: Ovum

## Products

HPE ALM 12.50 and HPE Agile Manager 2.5.

## Ovum SWOT assessment

### *Strengths*

#### **HPE has focused on the enterprise IT market and has performed exceedingly well**

The ALM market for product manufacturing and systems engineering has never been a target market for HPE, and instead it has developed features for the needs of enterprise IT departments. Achieving the second highest score in this category for technology, HPE ALM and HPE Agile Manager offer comprehensive capabilities. There are a large number of integrations available out-of-the-box that span every segment of the lifecycle.

#### **There is excellent support for application development security**

HPE Fortify, a tool in HPE's portfolio, will scan source code for a range of security issues. Fortify is able to integrate with HPE ALM and Agile Manager and provide a seamless experience in using the tool.

#### **Extensive support for agile methodologies**

HPE ALM tools support the most popular agile methodologies, as well as the latest Scaled Agile Framework (SAFe), of which HPE is a Gold Partner. SAFe has become a useful encapsulation of a decade of evolution in agile practices that are appropriate for large-scale projects. Having a tool as well as consultants that can support SAFe will be valued by organizations that have adopted SAFe.

### *Weaknesses*

#### **The ALM solution will integrate with HP Portfolio and Project Management (PPM) but currently lacks portfolio planning**

Project portfolio management has become an essential tool for project managers, and HPE can offer HPE PPM to fulfill this need, but there remain tasks for portfolio management that should ideally be available within HPE Agile Manager without an additional license. One of these is portfolio planning, which HPE intends to add to its roadmap.

### *Opportunities*

#### **HPE has a rich history in software testing tools that can be leveraged with ALM**

HPE's portfolio of testing tools is market leading but the degree of integration with HPE's ALM solutions could be improved. This would be an excellent opportunity for HPE to consolidate its enterprise IT offering. Lifecycle traceability involves tracing requirements to test case generation, test case execution, linking test results back to requirements, and so forth. A solution that reduces the time and effort to trace these activities and offer the tracing from a single dashboard would be welcome.

#### **HPE Helion Stackato, the developers' PaaS, offers good opportunities for ALM**

The market for developer PaaS keeps growing and HPE's stake with HPE Helion Stackato offers an opportunity for HPE ALM users to work on the cloud as well on-premise. As is typical with PaaS environments, the visibility of support for ALM is almost non-existent (this applies to all vendors). However, rather than wait for customers to ask for it, HPE should look to see how ALM on the cloud can provide SAFe development.

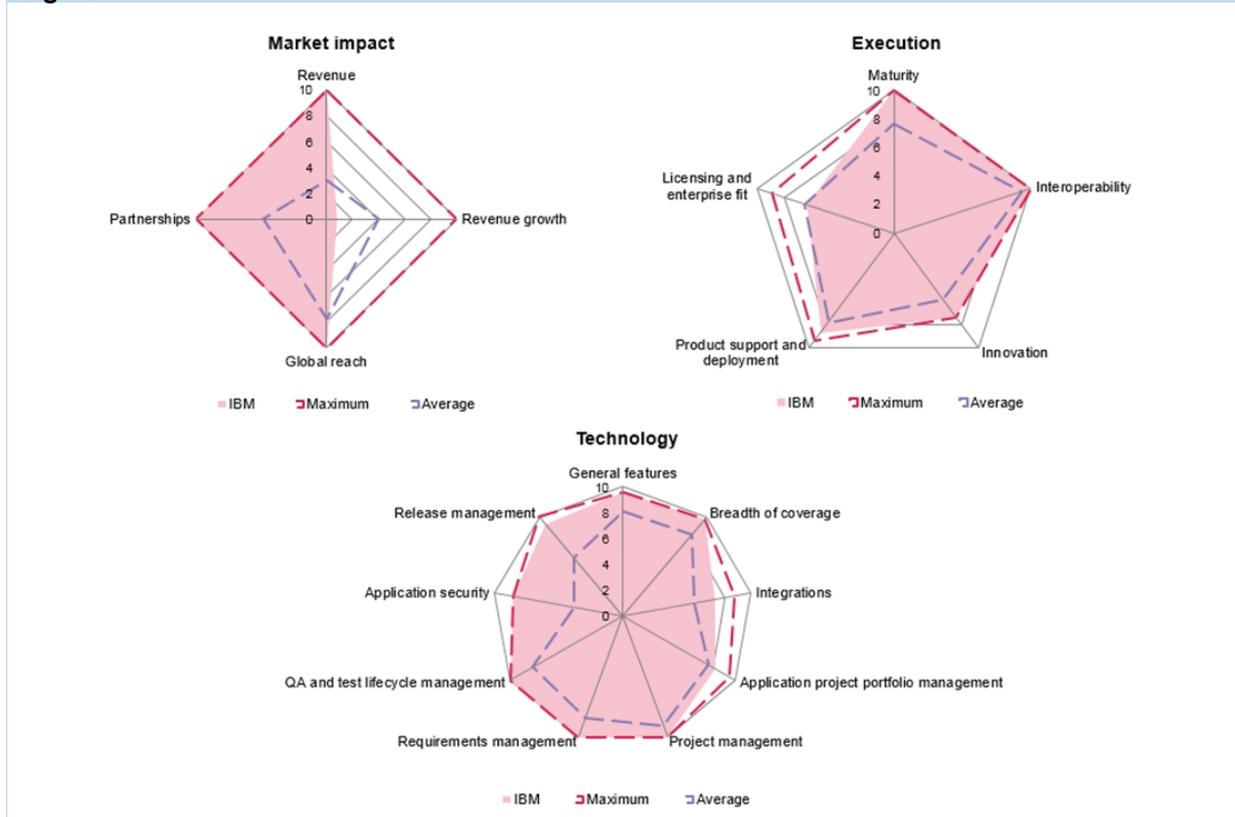
### *Threats*

#### **HPE needs to execute strongly in the market**

The challenge from open source tools and the expansion of DevOps to become an all-consuming focus for many businesses has created ripples and opportunities in the market. The DevOps tool market is still growing and there are threats to existing tools. HPE needs to get its message across better and improve its market execution. One can speculate that the split within HP may have created a lull but now HPE should have a renewed focus.

## IBM (Ovum recommendation: leader)

Figure 11: IBM



Source: Ovum

## Products

The primary products are IBM Rational Collaborative Lifecycle Management (CLM) version 6.0 and IBM Bluemix DevOps Services, continuously enhanced. CLM comprises IBM Rational Team Concert, IBM Rational DOORS Next Generation, and IBM Rational Quality Manager.

## Ovum SWOT assessment

### Strengths

#### IBM CLM can offer all the features enterprise IT requires

IBM's core solution for developing software in product and systems engineering is identical for use in enterprise IT. IBM's broad range of tools can offer comprehensive features that an enterprise IT department would need in an ALM solution, performing outstandingly in our ODM technology review. IBM is particularly strong in a number of areas compared with other vendors, one of which is application security, an often neglected area. For example, IBM has tools that will integrate with CLM to scan code statically and also test code in execution to identify security weaknesses.

## *Weaknesses*

### **The enterprise IT market has been embracing open source tools**

IBM and other ALM incumbent vendors have seen the application development market embrace open source tools, at the code producing level and to a lesser extent in management activities. While this is a difficult market in which to sell comprehensive ALM solutions, the answer is to target larger and complex projects that require a strong ALM offering.

## *Opportunities*

### **IBM needs to maintain contact with large enterprises**

The mass developer market is the target audience for IBM Bluemix but the target audience for ALM is the larger enterprise. There is a danger that IBM will lose touch with groups of developers in enterprises that need ALM but are not aware that they do, or have an aversion to the name ALM and its associations in the past with big solutions that did not deliver the lifecycle traceability they promised. The support for SAFe will certainly help to put the right message across in some quarters, while in others SAFe can appear overwhelming. Knowing your customer is vital.

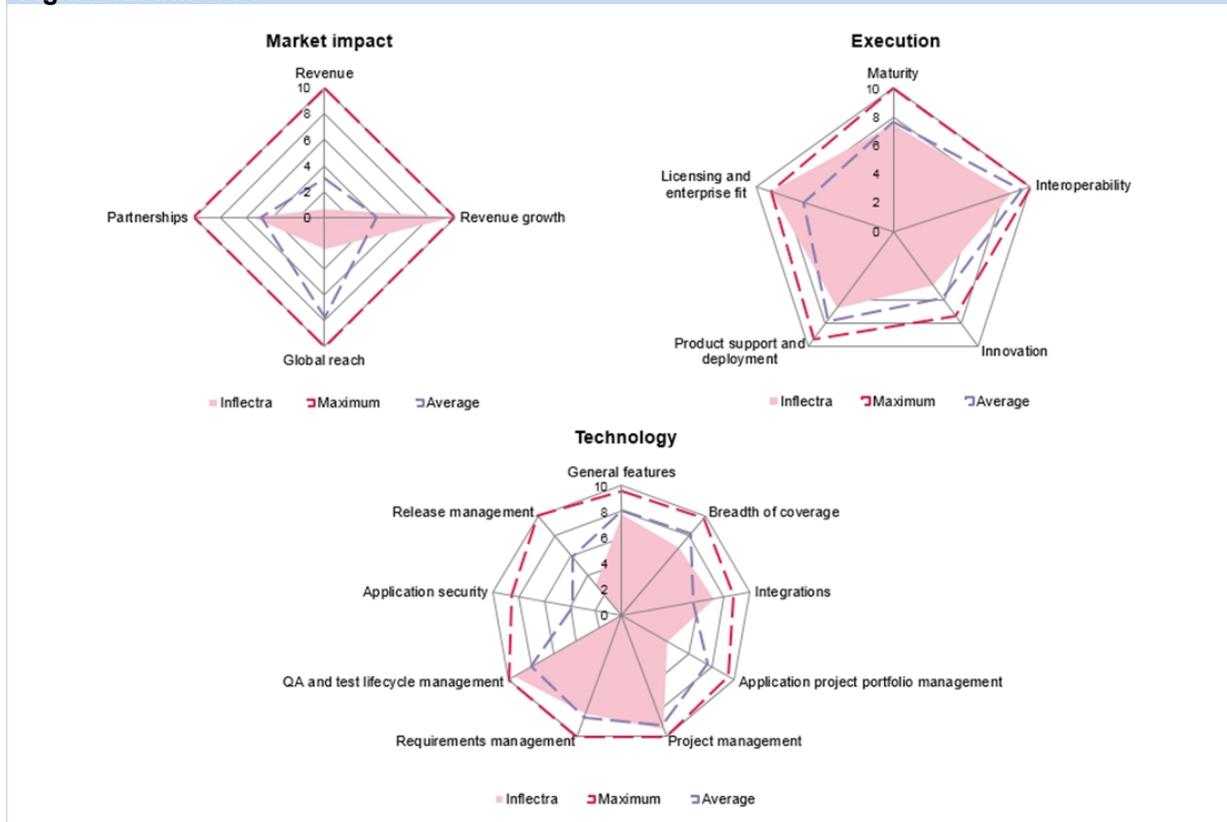
## *Threats*

### **The APM market requires tools strong on collaboration**

The market for enterprise IT ALM has been largely transformed by agile and now DevOps. Solutions that will do well in this market understand a generation of developers brought up on the latest social networks and mobile app culture. Tools that are simple to use, enhance collaboration, and integrate well with open source solutions will win here. IBM Bluemix caters well to this market, and it should not lose sight of this opportunity with its CLM solution. It may well be advantageous for IBM to produce a slimmer ALM solution to this changed market and reserve CLM for the higher demands of the engineering and IoT markets.

## Inflectra (Ovum recommendation: follower)

Figure 12: Inflectra



Source: Ovum

### Products

The primary product is Inflectra SpiraTeam comprising SpiraTest, SpiraPlan, and SpiraTeam.

### Ovum SWOT assessment

#### Strengths

##### Inflectra has made interoperability a solution advantage

A key product differentiator is the open, versioned API and the wide array of plugins, extensions, and integrations between SpiraTeam and other defect-tracking tools, test automation tools, unit test frameworks, version control tools, build servers, modeling tools, and developer IDEs. SpiraTeam users like the extensible platform that does not lock them into a single vendor solution. Inflectra also has test automation tools as add-on products that are fully integrated into SpiraTeam for customers looking for tight integration between testing and ALM.

#### Weaknesses

##### There is a lack of application security support in SpiraTeam

Ovum insists that application security is a first-class activity in ALM and this has been a problem for some vendors, including Inflectra. The software security development lifecycle is now well established and has been marginalized, while end users have faced an exponential increase in security breaches. Developers need to improve their awareness of security issues, and ALM systems must provide support for application security.

## Opportunities

### Inflectra intends to improve its project portfolio management (PPM) capabilities

Inflectra’s roadmap includes moving from a project/product level ALM to enterprise ALM with robust support for financials, portfolio planning, and regulated processes. PPM is required by enterprises to help make sense of projects that could easily proliferate and not yield sufficiently good returns. PPM is an ideal practice in software development and is good direction for Inflectra to take.

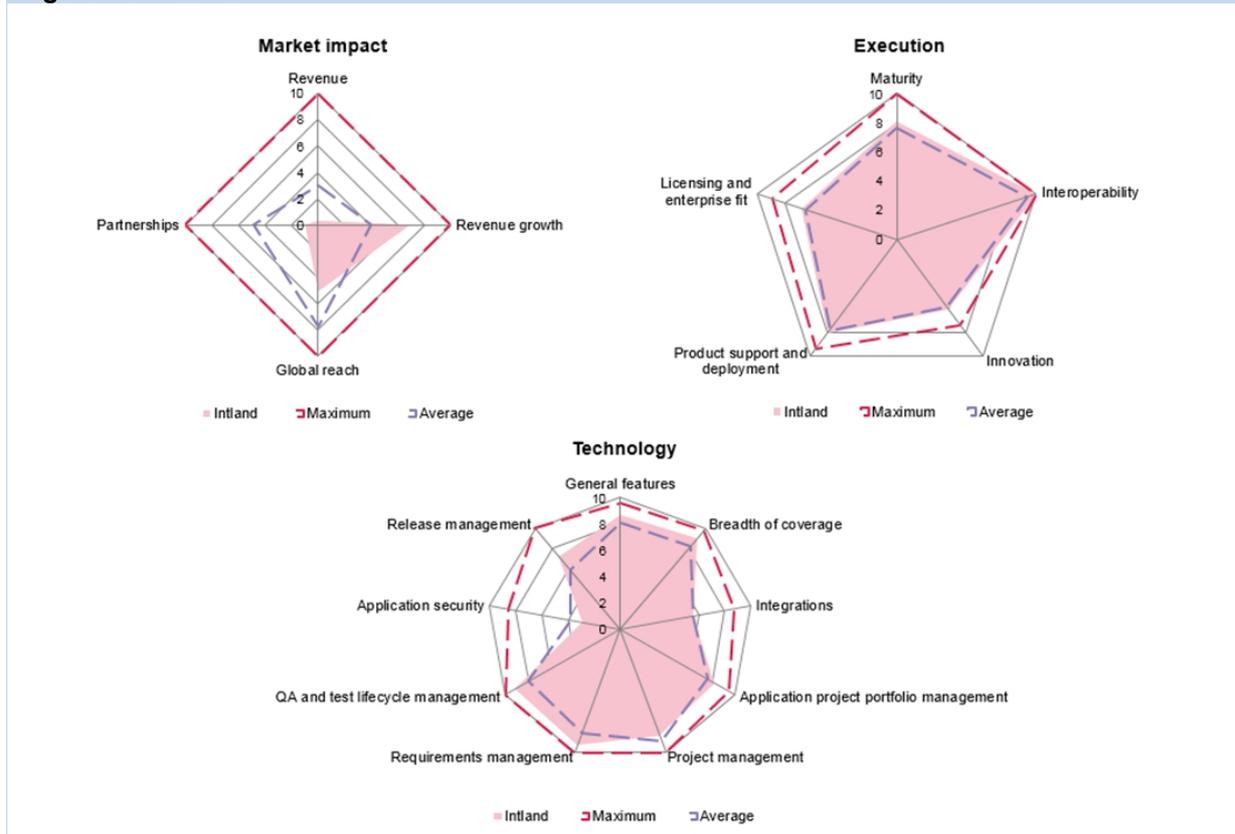
## Threats

### The DevOps trend sweeping enterprise IT will cause rationalization among ALM vendors

Inflectra is aware that its release management capabilities need to improve and it addressing this is in the pipeline. Inflectra needs to look at the wider DevOps trend and asses how ALM will be influenced. Ovum sees opportunities as well as challenges in how ALM vendors address DevOps. With the growth in DevOps release management solutions, enterprise IT customers may well demand tighter integration with ALM, if not single-box management solutions. The lifecycle in ALM does extend into operations and production. These changes will cause a shakeout in the ALM market.

## Intland (Ovum recommendation: challenger)

Figure 13: Intland



Source: Ovum

## Products

The primary product is codeBeamer.

## **Ovum SWOT assessment**

### *Strengths*

#### **Comprehensive lifecycle scope with support for SAFe**

Intland codeBeamer offers a comprehensive ALM solution covering the complete lifecycle. In contrast with some ALM products that are broken into separate modules, codeBeamer has organically integrated modules within a single holistic system that is able to manage processes across all modules using a single repository for gapless traceability. CodeBeamer uses plug-ins to provide work flows for different methodologies, including waterfall, Scrum, Kanban/Lean, and SAFe, and can also be extended to support custom processes.

### *Weaknesses*

#### **Integrations with IT operations tools and DevOps activities could be improved**

The IT operations space has a number of commonly found products that could be integrated with codeBeamer for an advanced DevOps experience. These include help-desk systems, performance testing tools, and application performance management tools.

### *Opportunities*

#### **ALM rip-and-replace may be the right policy in place of best-of-breed**

To enable software development teams to deliver quickly to market requires streamlining processes and other changes. One of the bottlenecks within businesses is exchanging work items between specialists, teams, and partners/suppliers due to different tools being used. Intland provides an ALM solution in a single box, which could be advantageous to an enterprise wishing to standardize internally, as well as across partners and suppliers, and reap the benefits of frictionless transfer of work items between developers.

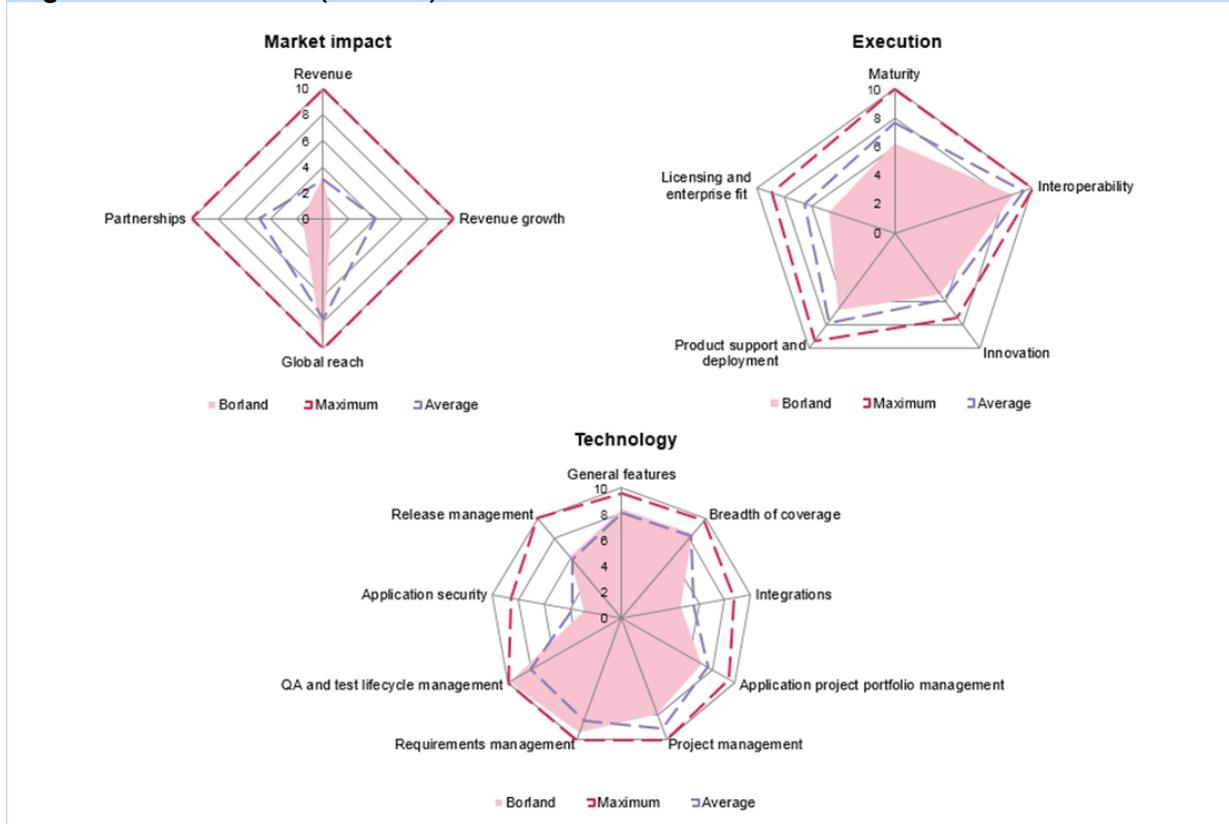
### *Threats*

#### **The enterprise IT ALM market has been hugely affected by open source tools**

The enterprise IT ALM market has been in turmoil with open source and agile causing large changes in buying patterns and the way in which developers work. Intland is relevant for enterprise IT but it is largely aimed at the engineering world. Nevertheless, IOT will bring these worlds closer together so Intland will be well placed to face the competition given its strength as an ALM product for engineered products and systems.

## Micro Focus (Borland) (Ovum recommendation: challenger)

Figure 14: Micro Focus (Borland)



Source: Ovum

### Products

The primary products are Micro Focus Atlas, Agile, Caliber, and Connect.

### Ovum SWOT assessment

#### Strengths

#### **Borland ALM offers broad coverage with good project portfolio and management capabilities**

The Borland ALM suite is targeted at the enterprise IT market and has good features across the lifecycle. Borland Agile has key project management features and performed well in the ODM. The portfolio of tools has in-depth feature capabilities in a number of lifecycle segments, noteworthy of which is requirements management and test management.

#### Weaknesses

#### **Support for application security is basic**

Enterprise software security is an important area that ALM solutions should support. Borland has integrations with static and dynamic code executing tools, which is good and better than available with some other vendors, but further support sought by Ovum was missing, such as, for example, security issues auto-populating defect-tracking systems.

#### Opportunities

#### **ALM in the enterprise space will be transformed by DevOps adoption**

DevOps will be the hottest topic on the IT agenda for many businesses in 2016-17. Micro Focus has a wide range of tools in the ALM space, with good support for agile methods, and there is an opportunity to expand into improving support for DevOps technologies, such as automated release management. Currently the DevOps release management tools are distinct and separate from the agile project management tools, but Ovum believes that tools that merge the activities in one offering will have an advantage in the market.

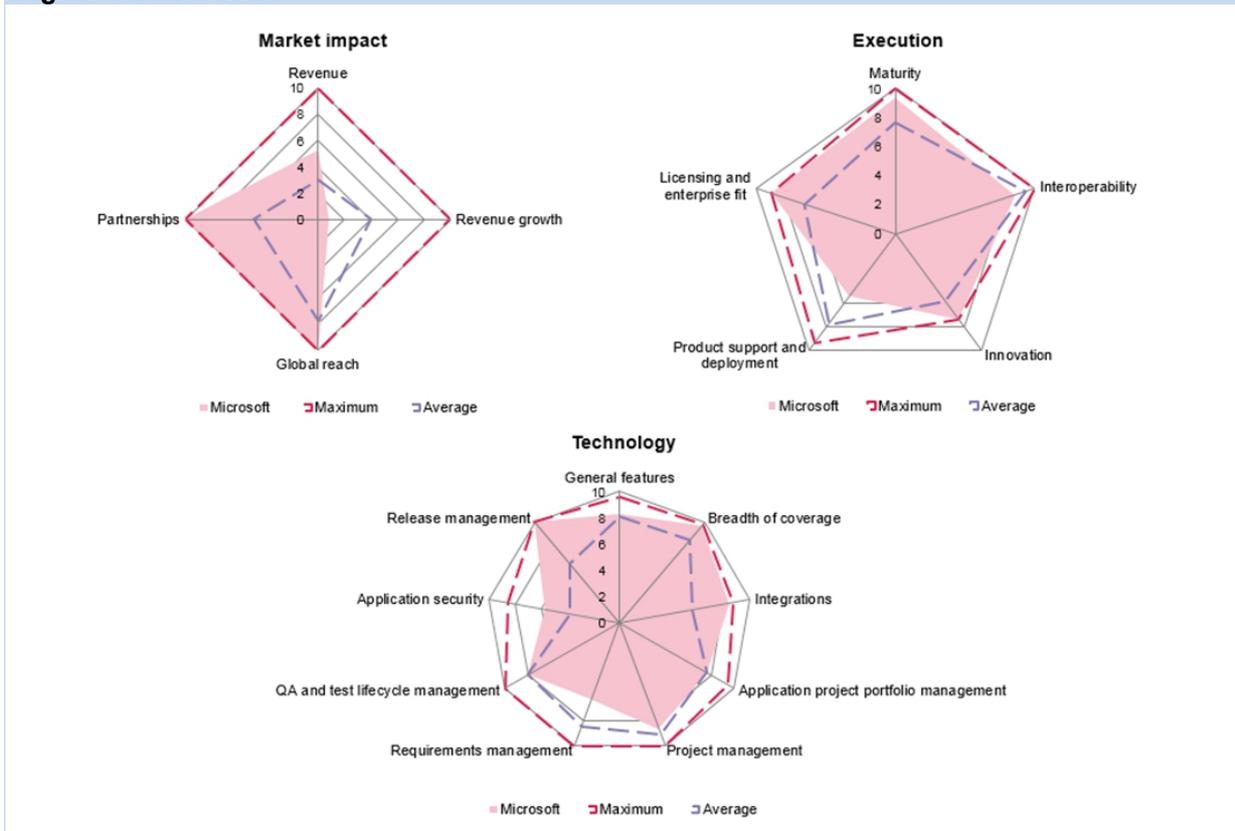
**Threats**

**Single-box ALM solutions are a threat to Borland’s ALM portfolio**

The consequence of agile and more recently DevOps adoption is that developing applications quickly to market is a reality. This also impacts ALM which needs to be supportive and not an impediment to fast application delivery. End-to-end lifecycle traceability, ease of use, and a single console/interface to the solution are important ways of enabling rapid delivery. The Borland portfolio of ALM tools will face a challenge competing against single-box ALM solutions, especially if these start to offer DevOps release management out of the same box.

**Microsoft (Ovum recommendation: leader)**

**Figure 15: Microsoft**



Source: Ovum

**Products**

**Products**

The primary products are Visual Studio Team Foundation Server (on-premise), Visual Studio Team Services (SaaS).

## Ovum SWOT assessment

### *Strengths*

#### **Microsoft has a strong all-round solution**

As an ALM solution for enterprise IT and regulated environments, Microsoft TFS is a strong all-rounder. The breadth of ALM coverage is one of the best in the ODM review. Microsoft TFS is a natural ALM solution for the large community of Microsoft developers developing solutions for organizations that have standardized on Microsoft products and .NET technology. It should also be considered by the wider developer community after Microsoft opened up its tools to support a range of IDEs and to run on multiple platforms, as well as deploy to multiple platforms. This solution is able fulfill the promise of ALM to provide end-to-end traceability, visibility, and collaboration across the lifecycle.

#### **Microsoft's ALM solution is one of few that offer release management**

The release management capability is exceptional in Microsoft TFS and has the advantage of being out-of-the-box in the one solution, where other vendors require additional licenses for their DevOps release management tools. This means that DevOps initiatives are well supported by TFS, allowing developers and operations staff to share a common tool that assists collaboration across silos.

### *Weaknesses*

#### **Requirements management is the weakest part of TFS**

Requirements management is the one area where Microsoft TFS could markedly improve. A range of features we expected to see but were missing included idea management, searching across information stored in multiple sources and locations, demand and request management, requirements interdependency mapping, requirements reuse management and support for inheritance rules, and baselining. We believe adding at least some of these features would significantly improve the product.

### *Opportunities*

#### **TFS could improve its integration with defect tracking and help-desk systems on application security issues**

An area where Microsoft is strong is in application security but it could improve its solution by auto-populating defect tracking systems and help-desk systems with detected security issues. Microsoft TFS can surface security-related warnings in the IDE. Microsoft is noteworthy for pioneering application development security lifecycle concepts, and this is a good opportunity for it to out-perform the market with out-of-the-box functionality for feeding back security issues to developers and other stakeholders.

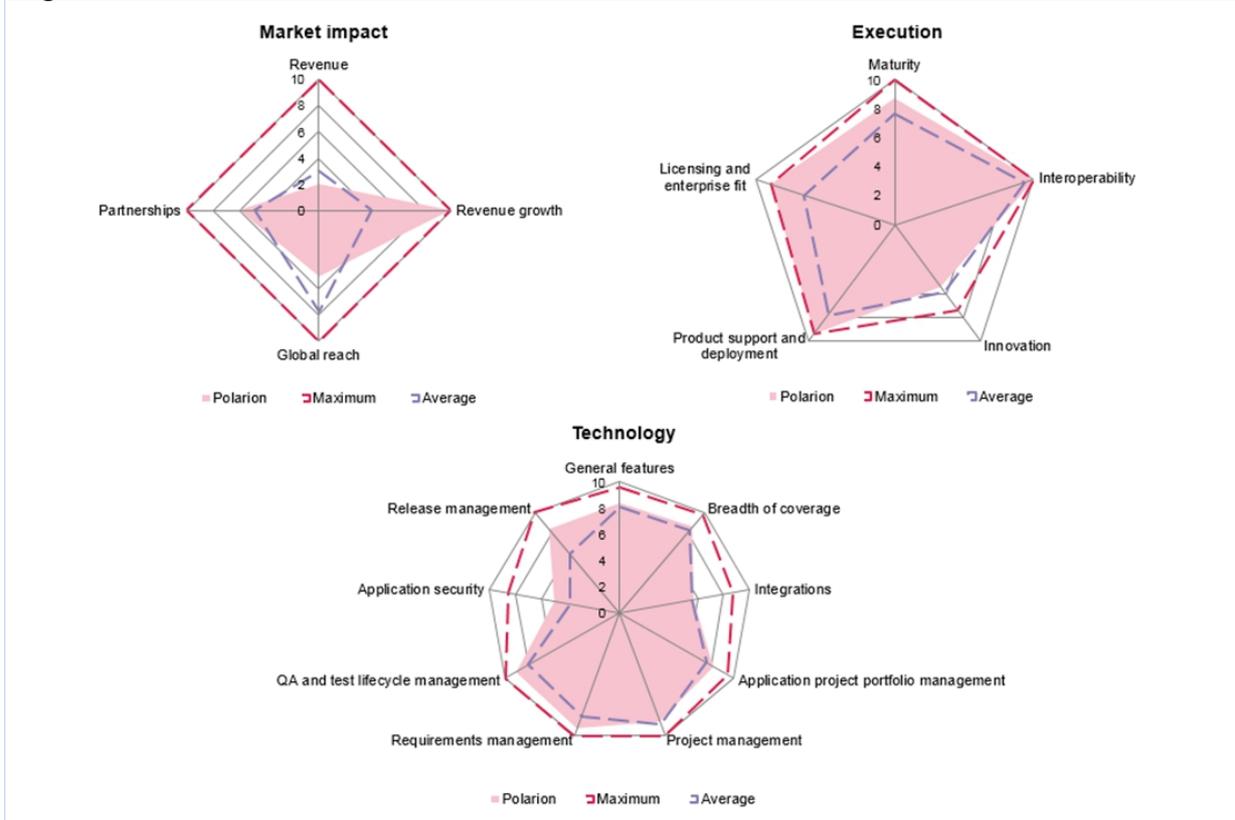
### *Threats*

#### **DevOps will have an impact on ALM**

Managing modern development and production environments is being radically affected by DevOps. It is likely that DevOps will become a defining approach for delivering software applications and this in turn will impact ALM. With Microsoft TFS providing a complete DevOps solution, it is ahead of other vendors that have split out their solutions between ALM and even across release management and release automation. Microsoft is well placed to meet challenges from other vendors in the enterprise IT ALM market, but it needs to improve its messaging for multi-platform deployment.

## Polarion (Ovum recommendation: leader)

**Figure 16: Polarion**



Source: Ovum

### Products

The primary product is Polarion ALM.

Note: Siemens acquired Polarion at the time this ODM project was in progress.

### Ovum SWOT assessment

#### Strengths

##### **Polarion ALM offers an organic, integrated, holistic ALM solution**

Polarion ALM offers support for the complete software development lifecycle, from requirements management to build and release management. Underpinning the solution is a workflow engine that allows any process to be used, including pre-built agile, traditional, or hybrid, and allows custom designed processes. There is full traceability of work items across the lifecycle. This solution is built as one box and therefore all the benefits of ALM are available from its tight, holistic integration.

##### **The solution allows users to select popular source control systems**

Users can select the source control system from the popular Git or Subversion preconfigured in Polarion ALM, or use connectors for Perforce or Codice PlasticSCM. The market for source control systems has become split between the popular open source solutions or the specialist players that can add improved and secure access control, and other advanced features. Ovum no longer expects an ALM vendor to offer its own native source control solution, but it is worth noting that Polarion was

built on top of open source solutions and its out-of-the-box support for subversion and more recently Git is very tight.

### *Weaknesses*

#### **Polarion can improve its range of connector integrations**

There are a number of areas in enterprise IT, including mobile application development platforms, security development lifecycle tools, and application performance management tools, that could be integrated with ALM but for which Polarion has no out-of-the-box connectors. These are all specialist activities that could benefit from being integrated so that work items could be tracked across the different tools, and also support feedback and collaboration.

### *Opportunities*

#### **Challenge of recognition as an agile ALM provider**

There is a large market for agile project management solutions, because automation is a key enabler for agile management processes such as Scrum and Kanban, as well as practices such as continuous integration and delivery. ALM vendors have sometimes struggled to resonate within the agile community that has viewed ALM as too heavy for the lighter agile approach. This has also been a challenge for Polarion, especially given its strength in mechatronics and its focus on meeting the plethora of standards that exist in the industrial and engineering space. However, as agile adoption increases in systems and product engineering, Polarion is well placed to have its agile message understood. At the same time, we believe the enterprise IT space is primed to understand the new ALM that is agile and tightly integrated so that it can deliver on the promise of end-to-end traceability. Ovum's use of the term agile project management for enterprise IT ALM may help vendors such as Polarion to improve their messaging.

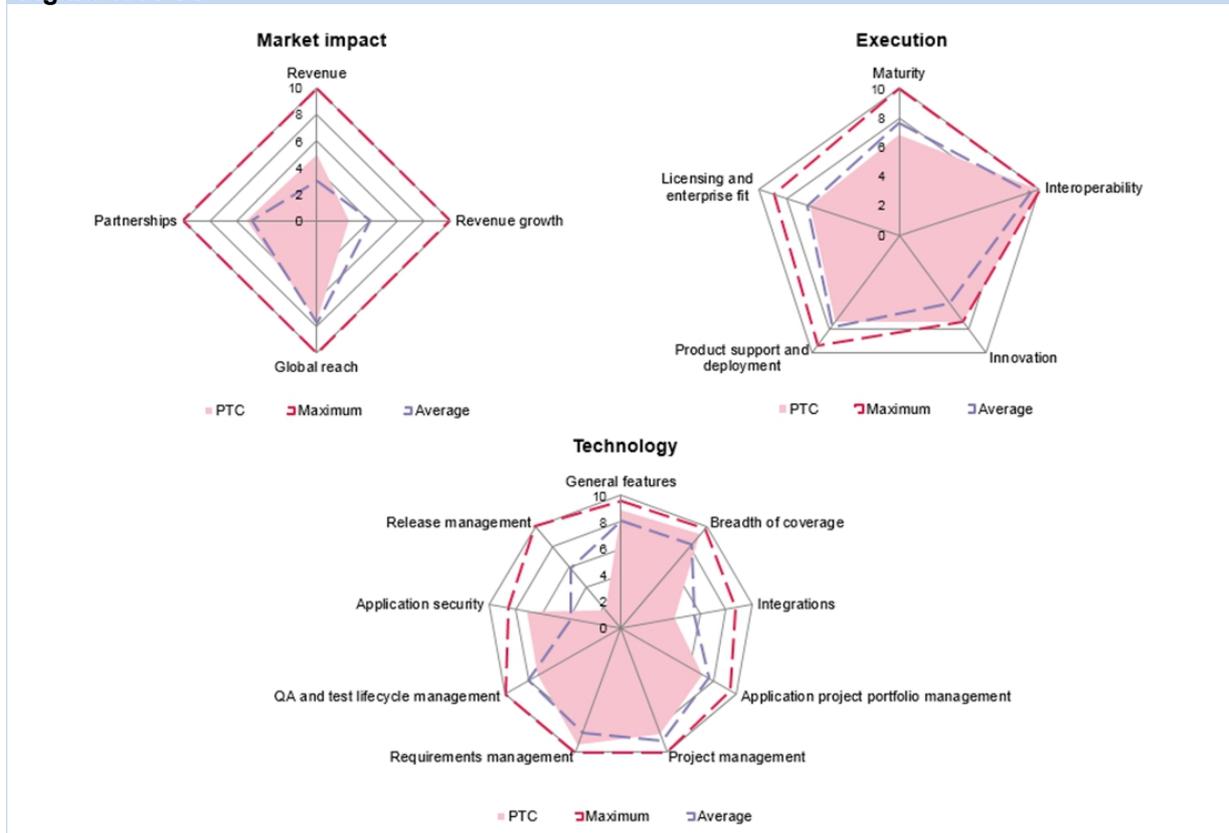
### *Threats*

#### **As part of Siemens, Polarion gains protection and exposure to a large customer base**

It remains to be seen how Siemens will integrate Polarion internally and to what extent the Polarion brand will be kept for the external market. Polarion will have opportunities to sell into the wider PLM market on the strength of its ALM and PLM experience in integrating with Teamcenter, as well as continuing to expand in the mechatronics market. The considerable Siemens customer base is Polarion's biggest opportunity for growth.

## PTC (Ovum recommendation: challenger)

Figure 17: PTC



Source: Ovum

### Products

The primary products are PTC Global Software Development, PTC Requirements and Validation, PTC Model-Based Systems Engineering, and PTC Software Modeling. The first two products are based on PTC Integrity Lifecycle Manager. PTC also has a new agile project management tool to be released in mid-2016.

### Ovum SWOT assessment

#### Strengths

##### PTC Integrity Lifecycle Manager is an integrated, holistic ALM solution

ALM promises end-to-end traceability, project visibility, and collaboration, and PTC Integrity Lifecycle Manager is able to deliver this in an organically built, holistic solution. Organizations have often struggled to get value out of their ALM tools because they allowed a mix of best-of-breed tools to flourish, and then found integration a burden which at best only had limited ways to deliver the ALM promises. Ovum recommends that organizations review their ALM strategy and consider a rip-and-replace approach to ALM standardization. PTC Integrity is one such integrated holistic solution and should be considered.

##### PTC’s ALM solution supports the software security development lifecycle

The support for application security out-of-the-box is excellent and brings to enterprise IT a strength that PTC has in the engineering space, where security is of crucial important and has a safety-critical

dimension. In enterprise IT security is a neglected concern with the result that many enterprise applications have poor in-built security. PTC's ALM provides excellent support for the software security development lifecycle.

### *Weaknesses*

#### **PTC's focus on Internet of Things may be missing the opportunity existing for agile ALM in enterprise IT**

PTC has created an ALM solution that is an excellent match for the needs of systems and product engineers building the IoT future. However, the solution needs a change of emphasis to suit the needs of enterprise IT users. The two areas most in need of improvement are out-of-the-box integration, including mobile appdev platforms, code testing tools, performance testing tools, application performance management, and help-desk systems. The second area is release management. With DevOps now driving the enterprise IT agenda, the importance of release management is heightened.

### *Opportunities*

#### **A new agile project management solution is in the works**

PTC is intending to launch in 2016 a new purpose-built product to help manufacturers adopt agile practices with strong support for safety and quality. While the focus is still on the manufacturing industries, which PTC knows well (it is known well in this sector), the solution is expected to strengthen the agile approach, which grew out of the enterprise IT space. The opportunity for spreading agile practices in engineering and manufacturing domains is large. For example, pockets of Scrum adoption can be found in most large manufacturers, and in some it is already pervasive, not only in embedded software development but also in CAD/CAM design and development, so PTC will be well placed to engage with these manufacturers.

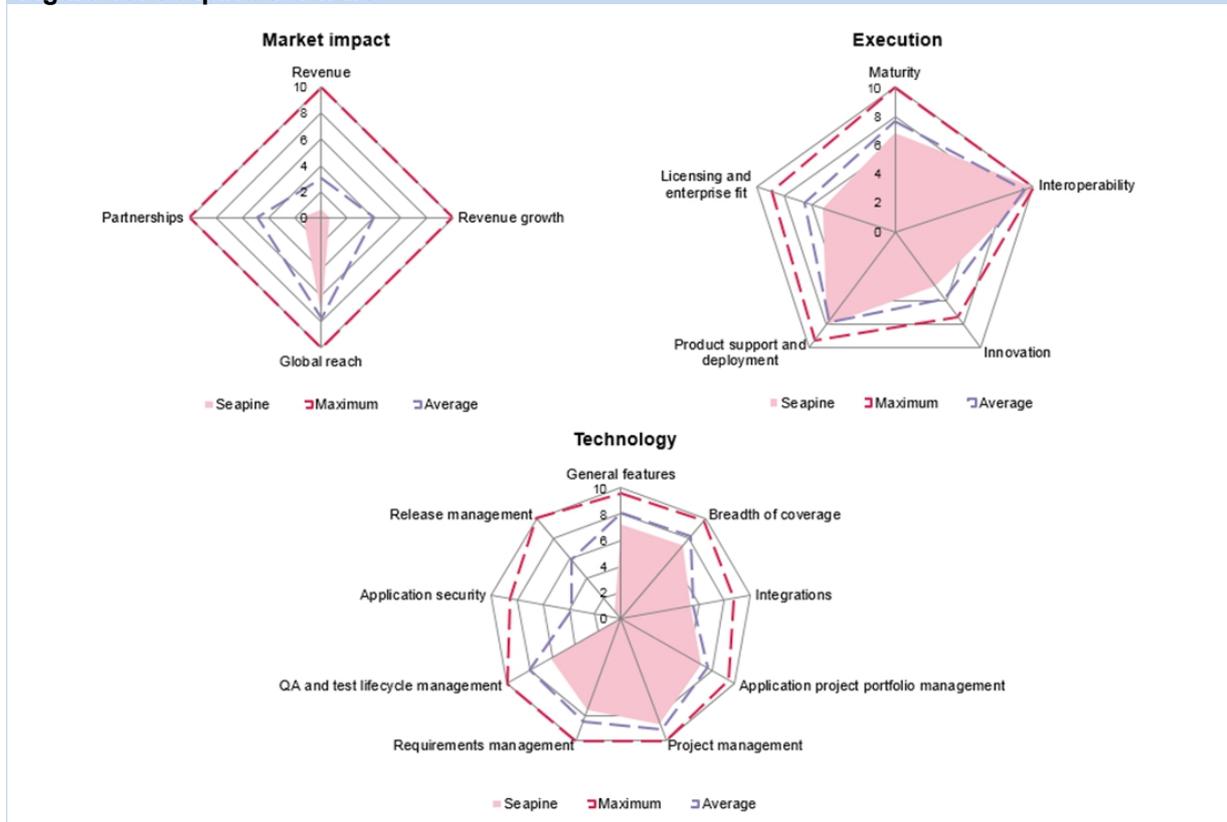
### *Threats*

#### **The enterprise IT ALM market will receive a shakeup from DevOps**

The enterprise IT space has only just stabilized from the agile revolution and now it is being shaken up again by the growth in DevOps adoption. DevOps is a mix of agile-inspired ideas, as well as collaboration initiatives designed to break down silos, and a push for better automation in application delivery. Continuous delivery automation and release management is one successful outcome of DevOps. ALM will need to encompass DevOps, and DevOps will continue to evolve within IT operations, and PTC will need to keep abreast of these trends. We expect to see greater synergies between ALM and DevOps management solutions. There will also be an impact on manufacturing because continuous engineering delivery will bring DevOps into manufacturing.

## Seapine Software (Ovum recommendation: follower)

**Figure 18: Seapine Software**



Source: Ovum

### Products

The primary product is Seapine ALM. The solution is also available as individual modules: TestTrack RM, TestTrack Pro, TestTrack TCM, Surround SCM, QA Wizard, and ALM Data Warehouse.

### Ovum SWOT assessment

#### Strengths

#### Seapine ALM Data Warehouse offers advanced application development analytics capabilities

Seapine’s ALM Data Warehouse is an analytics platform for producing project insight and enabling fact-based reviews. From one central location, teams can, for example, review the schedule status of active projects, investigate test plan performance across teams, and analyze defect counts across release cycles. Application intelligence is an underexplored aspect in ALM, and this capability gives Seapine a differentiator in the ALM space.

#### Seapine is designed to support multi-speed, hybrid development environments

Large organizations tend to have legacy maintenance projects run in traditional/waterfall style, while newer projects tend to follow agile methodologies or a mixed hybrid style. Seapine is able to support any mix of these development methodologies. Seapine also supports scaled agile development through the planning and team management capabilities of the solution, such as Project Management Office, for use by the organization.

## *Weaknesses*

### **There is minimal release management out-of-the-box**

Seapine has no connectors with release management tools, which because it does not offer such native capability, is a serious omission. DevOps is becoming the hottest technology in IT and offers excellent opportunities for an ALM vendor to improve native development-operations integration. There are connectors available for CruiseControl, Hudson, and Jenkins, which at least helps with continuous integration.

## *Opportunities*

### **ALM in the enterprise IT agile project management space has room for growth**

We believe the growth of DevOps will encapsulate agile, and within forward-thinking organizations will also encapsulate ITIL, to offer a collaborative and integrated approach across development/operations/business. This trend will be driven by digital transformation in the decade ahead. There is a huge opportunity for ALM solutions to be relevant across the complete lifecycle and not just development. If Seapine evolves its ALM along these lines it will move out of Ovum's "follower" category.

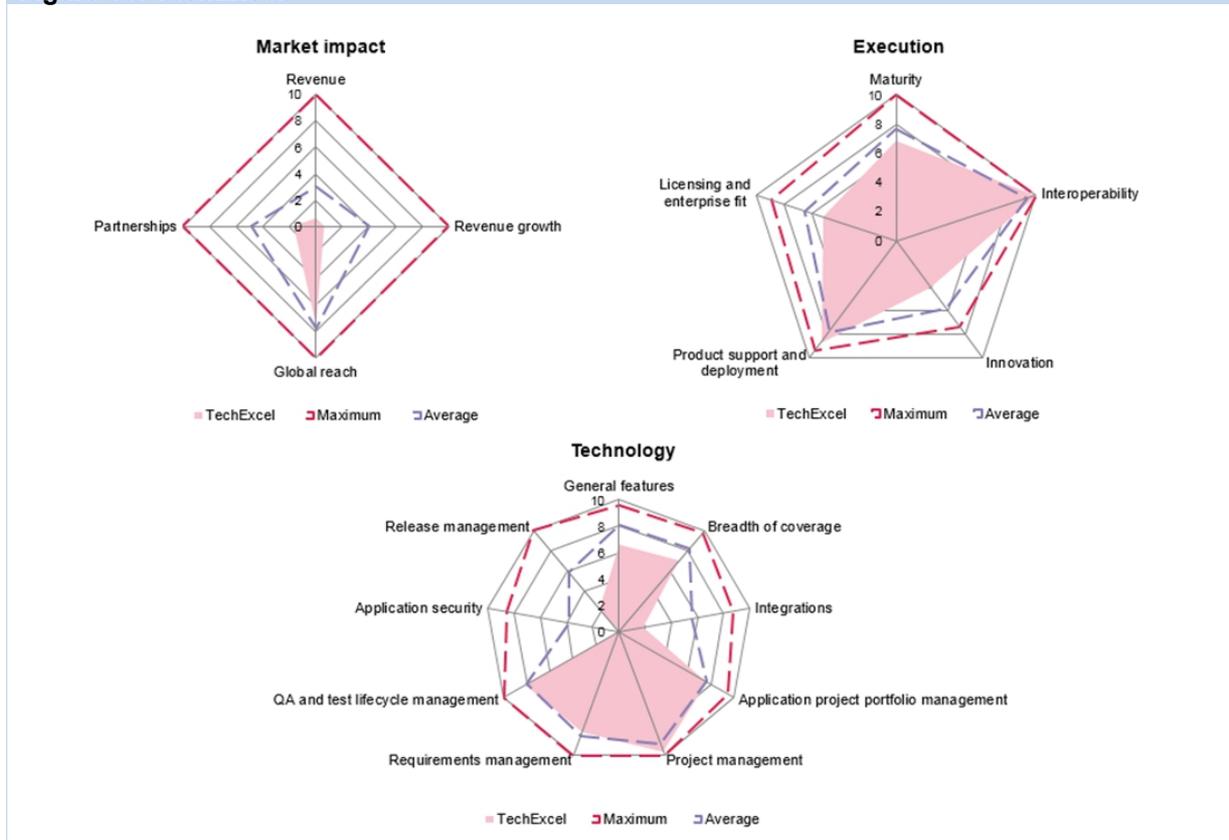
## *Threats*

### **Seapine has survived in a highly competitive market**

Seapine has been in the ALM market for many years and it may need to transform the solution to survive in a market that has been hugely impacted by open source tools. For example, we no longer consider source version control as being an essential native capability within an ALM, because the open source market has largely commoditized these tools. It may make sense for Seapine to focus its attention elsewhere within its suite to areas not well covered by open source tools.

## TechExcel (Ovum recommendation: follower)

Figure 19: TechExcel



Source: Ovum

### Products

The primary product is TechExcel DevSuite.

### Ovum SWOT assessment

#### Strengths

#### TechExcel DevSuite has excellent project portfolio management (PPM) capabilities

The DevSuite PPM module is a rounded solution designed for managing multiple teams and projects, spanning financials management, product and project planning, resource management, and demand management. It can also produce automated timesheets from work done by team members.

TechExcel DevSuite solution has all the necessary features to offer enterprise IT projects a single-box ALM solution, delivering the promise of ALM including end-to-end traceability, project visibility, and multi-team collaboration.

#### Weaknesses

#### Out-of-the-box integration with third-party solutions could be improved

DevSuite integrates with more than 20 version control systems, enabling organizations to use the source code management tool of their choice. DevSuite also integrates with the Eclipse IDE and testing tools TestComplete and Ranorex, although the range of integrations in these categories should be widened. There is also integration with ServiceWise, TechExcel's IT service management and

customer support solutions. Ovum believes the solution should add the following missing integrations: continuous integration tools, help-desk systems, performance testing, and application performance management tools.

### Opportunities

#### DevOps can offer TechExcel opportunities in integrating DevSuite with ServiceWise

TechExcel offers an ITIL and IT service management solution in ServiceWise. This creates a DevOps opportunity for bridging dev and ops with its two solutions DevSuite and ServiceWise. Ovum believes there are further possibilities in automation within the DevOps scope, allowing developers and operations staff, as well as end users in the business, to collaborate and exchange information to improve applications in production use.

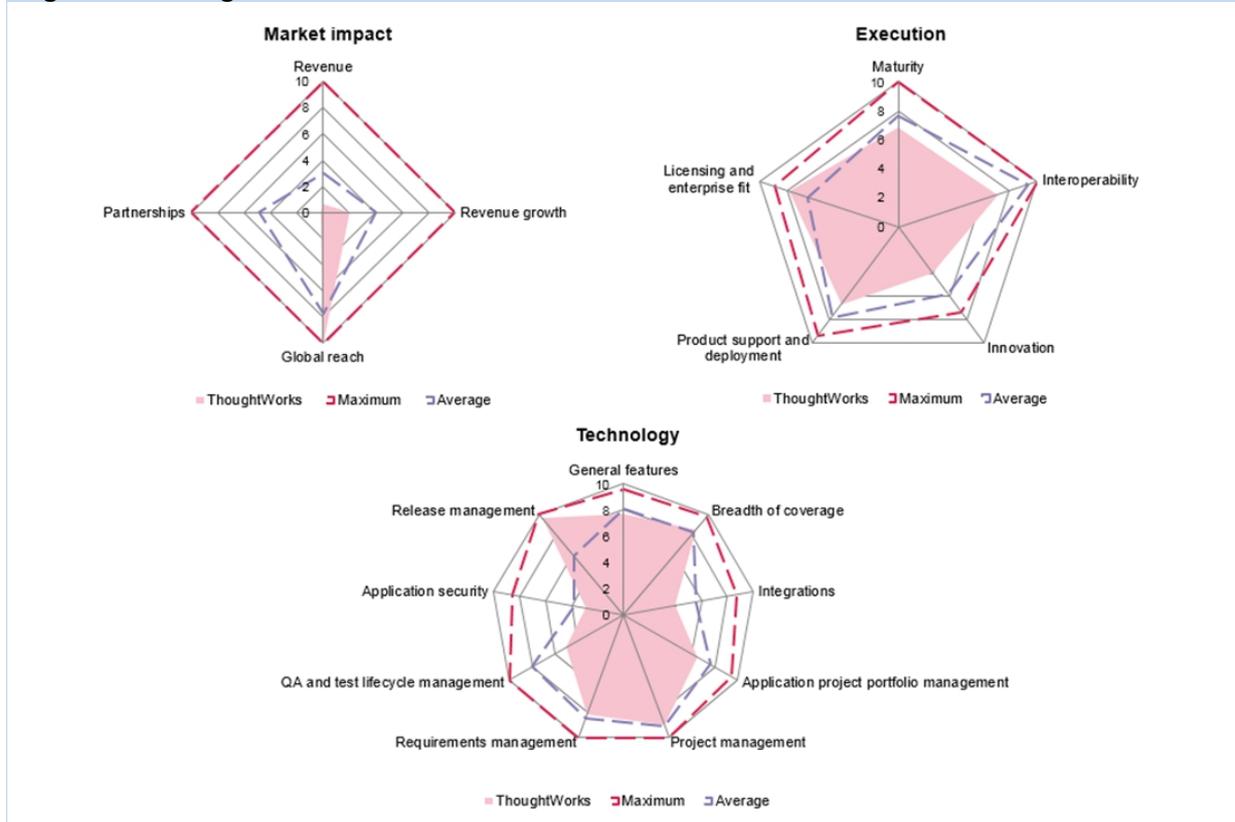
### Threats

#### TechExcel should keep a close eye on the DevOps market

DevOps is currently the hottest topic in the enterprise IT space, and TechExcel has only limited release management capabilities. It should build out its solution into release management to capture these new opportunities, and this would tie in well with its ServiceWise solution. The alternative is for TechExcel to integrate DevSuite with leading DevOps release management solutions. Ovum believes ALM solutions will be expected to offer this kind of DevOps support in the near future and TechExcel will need to consider how this will affect its position in the market.

## ThoughtWorks (Ovum recommendation: challenger)

Figure 20: ThoughtWorks



Source: Ovum

## **Products**

The primary products are Mingle and Mingle Plus (agile project management). In addition, the product portfolio holds Gauge (automated testing), Go (continuous delivery), and Snap (continuous delivery SaaS version).

## **Ovum SWOT assessment**

### *Strengths*

#### **ThoughtWorks is a leading agile consultancy and its Mingle product reflects its expertise in agile project management**

Mingle is designed to be a lightweight but advanced agile project management tool. Although waterfall processes can be supported, the tool is best used for agile projects. It allows teams to create the process workboards that fit their needs, from Scrum to Kanban. The ThoughtWorks approach is to combine top-down and bottom-up styles of agile management to enable scaled agile that can work for small teams and for multiple teams in large-scale projects. In the ODM, the solution features ranked high for project management, and requirements management, and with add-on products Go or Snap, for release management.

#### **Mingle's Program Dependency Board is an essential tool for scaled agile projects**

As projects become larger, managing work item dependencies within a team and across multiple teams becomes more difficult. Mingle's Program Dependency Board provides an essential high-level view in a central location. Teams can raise, accept, and resolve (complete) dependencies. The board has filtering features so that dependencies can be easily identified. Particularly in large-scale agile projects, with agile teams working in fast iterations, continuously delivering, managers are able to define releases and milestones and ensure that all necessary work items are available at key points.

### *Weaknesses*

#### **Mingle could improve its support for the software security development lifecycle (SSDL)**

Mingle has connectors to security code scanning tools, both static and dynamic, but further application security support is not available. Mobility and the web have changed how enterprises build their applications, and with applications frequently traversing the data center network, the point of security has moved from the firewall to the application itself. Building secure applications is the standard to which all application development should aspire, and agile project management solutions can make this task easier with out-of-the-box SSDL support.

### *Opportunities*

#### **ThoughtWorks could integrate its tools into a tight single ALM solution**

ThoughtWorks has a portfolio of agile and DevOps ALM tools, designed for the most advanced agile enterprise development projects. The opportunity exists to bring these tools together into a tightly integrated agile and DevOps ALM solution. Because the market still views development and application delivery as separate activities from a tooling viewpoint, there is an opportunity to bring DevOps to ALM by, for example, integrating Mingle and Go. ALM promises end-to-end traceability, project visibility, and team collaboration. However, the synergies in ALM go further, and include application development project intelligence and analytics.

## Threats

### **The ALM market will go through gyrations as a result of DevOps**

ThoughtWorks is a good citizen in the application development world with the many open source tools it has donated to the community, and this is highly respected in the IT industry. The credibility and visibility that these first-class tools enjoy in the community also bring ThoughtWorks valued customers. The product ventures of ThoughtWorks therefore benefit from the reputation of the company as a whole. However, the ALM market will change as a result of DevOps, opening up opportunities and challenges, and ThoughtWorks is advised to consider its strategy against these changes.

## Vendor solution selection

### Inclusion criteria

Ovum drew up a shortlist of vendors to invite participation of the ODM project based on its experience of the market. The shortlist was designed with the objective of capturing the largest players in the market as well as the most innovative and fastest growing companies. The general inclusion criteria are given below.

Ovum assessed vendor inclusion on basis of meeting:

- A minimum revenue threshold based on licenses, or combined licenses and consulting threshold, or threshold number of customers.
- Vendor does not focus on APM in a single vertical industry.
- Vendor solution should include support for at least four core functional areas in release management and automation, listed in the technology methodology section below.

## Methodology

This research is based on the considerable depth of research Ovum analysts have accumulated in the software lifecycle management space. Participating vendors were asked to complete a comprehensive spreadsheet for the three dimensions of the ODM. Briefings and product demos followed and the various parts of the research were reviewed with the vendors before signing off. The three dimensions of the ODM are explained in turn.

### Technology assessment

In this assessment dimension Ovum analysts develop a series of features and functionality that would provide differentiation between the leading solutions in the marketplace. The criteria groups identified for APM are given below, with section weight percentage. Note: the main sections are listed with the sub-row headings, but the sub-sub-rows are omitted.

#### **General agile project management features, 16%**

- There is an embedded workflow system for creation and orchestration of processes
- Work item traceability
- Is the product available as a cloud service?
- Is the product available on-premise?

- Control solution
- Does the product have an admin mobile app for accessing the dashboard?
- Solution repository
- Reporting
- Dashboard
- API
- Data link or transfer standards supported
- Role-based features: managers/team leaders/developer-tester roles

**Breadth of agile project management coverage, 8%**

- Process support
- Application project portfolio management
- Project management
- Requirements definition
- Requirements management
- Software architecture and design modeling
- Database modeling and design
- Change and configuration management
- QA and test lifecycle management
- Defect/issue tracking management
- Release management and automation
- Performance monitoring and analytics

**Integrations, 9%**

- Has connector technology for creating bi-directional traceability of data and reporting
- List tools for which integration exists out-of-the-box, by lifecycle discipline

**Application project portfolio management, 10%**

- Multiple projects and teams management
- Financial management
- Product planning
- Project planning
- Automated timesheets (pulls data from work done by team members)
- What-if modeling
- Resource management
- Demand management
- Risk management
- Multi-project/multi-team planning
- Multi-project/multi-team resource balancing/allocation
- Multi-project/multi-team artefact dependency management

- Can projects be prioritized?
- Cross-project reporting

#### **Project management, 12%**

- IT governance and compliance regulatory check features
- Identification of risks and dependencies
- Collaboration and knowledge capture and exchange
- Requirement and task estimation support (agile points system, time, FPA, and so on)
- Visual and flexible tracking of work effort
- Resource allocation and scheduling
- Release planning
- Iteration planning
- Prioritization of iterations, and agile stories/tasks
- Customizable agile user stories/tasks allowing comments/annotations and flags
- Electronic workflow whiteboard
- Project charts
- Project Intelligence (metrics for appdev with real-time analytics and reporting)

#### **Requirements management, 13%**

- Idea management
- Search and query data that is stored and managed in multiple sources and locations
- Demand and request management
- Requirements interdependency mapping
- Requirements reuse management and support for inheritance rules
- Baselineing
- Change impact analysis
- Coverage analysis
- Built-in Instant Messaging
- Can the following be annotated/commented:
  - Requirements collaboration is Wiki-based with read and write capability
  - Process/methodology authoring and publishing
  - Authorship of requirements and changes/updates visible
- Link requirements to models and prototypes

#### **QA and test lifecycle management, 13%**

- Test cases auto generated by requirements
- Automated validation of test plan coverage of requirements
- Conduct gap analysis of test plans through requirements tool
- Defect tracking/task management integration
- Track tests by requirement

- Test case branching and reuse
- Automation in use case test authoring and refactoring
- Historical based analytics & reporting
- Can product features / tasks be represented on a risk chart?
- Manage combinatorial testing
- Scheduling and automated execution of tests
- Test data management
- Unit test management
- Manage test lab environment
- Out-of-box testing tools supported (list)

#### **Application security, 8%**

- Integrate with static testing (code-scanning) tools
- Integrate with dynamic testing tools
- Security issues auto-populate defect tracking system
- Security tracking integrated with trouble ticketing system
- Security issue impact analysis
- Risk prioritization of security issues
- Security assessment reporting

#### **Release management, 11%**

- Continuous integration and testing
- Continuous deployment
- Build rollback
- Build dependency tracking
- Intelligent build (for example, only needs to build files that have been changed)
- Build validation
- Release management
- Is there a mechanism for end-user feedback to be captured and fed back to developers?
- Third-party release automation integration (list out-of-the-box)
- Automatically provision and deploy to a private cloud
- Automatically provision and deploy to a public cloud (list supported public clouds)

#### **Execution**

In this dimension, Ovum analysts review the capability of the solution around the following key areas:

- **Maturity:** The stage that the product/service is currently at in the maturity lifecycle is assessed here, relating to the maturity of the overall technology/service area.
- **Interoperability:** In this element we assess how easily the solution/service can be integrated into the organization's operations, relative to the demand for integration for the project.
- **Innovation:** Innovation can be a key differentiator in the value that an enterprise achieves from a software or services implementation, and this is assessed here.

- **Product support and deployment:** Referring to a combination of assessed criteria and points of information, Ovum analysts provide detail about various deployment issues, including time, industries, services, and support.
- **Licensing and enterprise fit:** Ovum analysts assess the product from a licensing perspective, such as is if it is a single product with a common console for all modules, if the solution can be easily downloaded and purchased, and the types of licenses available. The alignment of the solution is assessed in this dimension, and the potential ROI period identified.

## Market impact

The global market impact of a solution is assessed here. Market Impact is measured by a formula based on revenue and revenue growth. The final score has a maximum score of 10 and is represented on the ODM by the bubble size. Note that revenue is filtered by a ceiling cutoff. The ODM radar diagrams provide additional information on market impact as follows:

- **Revenues:** Each solution's global DevOps release management revenues are calculated as a percentage of those of the market leader. This percentage is then multiplied by a market maturity value and rounded to the nearest integer. Overall global revenue carries the highest weighting in the market impact dimension.
- **Revenue growth:** Each solution's revenue growth estimate for the next 12 months is calculated as a percentage of the growth rate of the fastest-growing solution in the market. The percentage is then multiplied by 10 and rounded to the nearest integer.
- **Global reach:** Ovum determines local presence in the four regions of the world: North America; Europe, the Middle East, and Africa (EMEA); Asia-Pacific; and Latin America. A score is provided factored to a maximum of 10.
- **Partnerships:** Ovum estimates the size of each vendor's partnership eco-system and then factors this to a maximum possible score of 10.

## Appendix

### Further reading

*Ovum Decision Matrix: Selecting an Application Lifecycle Management Solution, 2016–2017, to appear Q1 2016.*

*Ovum Decision Matrix: Selecting a DevOps Release Management Solution, 2016–2017, to appear Q1 2016.*

*Ovum Decision Matrix: Selecting an Agile Project Management Solution, 2016–2017, to appear Q1 2016.*

*Ovum Decision Matrix: Distributed Agile Delivery Models, 2016-2017, to appear Q1 2016.*

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## Ovum Consulting

We hope that this analysis will help you make informed and imaginative business decisions. If you have further requirements, Ovum's consulting team may be able to help you. For more information about Ovum's consulting capabilities, please contact us directly at [consulting@ovum.com](mailto:consulting@ovum.com).

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