Ovum Decision Matrix: Selecting a Multicloud and Hybrid Cloud Management Solution, 2018–19

Summary

Catalyst

The role and purpose of IT in organizations is undergoing significant change, driven by the need for businesses to become more agile and have greater control over the cost levers when it comes to technology. This transformation of IT involves many different aspects not all of which are technology-related, but the one thing they have in common is that IT modernization is about changing to meet the current and future demands of the business. This report provides a side-by-side comparison and evaluation of leading multicloud management solutions, with the findings delivered as the Ovum Decision Matrix (ODM). It considers the significance of management in a multicloud and hybrid cloud world and the way in which this influences the way in which technology is deployed, used, and controlled.

Ovum view

The market in cloud computing is growing, and the strategic use of cloud is also maturing. Initially, cloud was selected and instigated by line-of-business functions, which meant that organizations had pockets of different cloud solutions. Ovum research has identified that by having a clear cloud strategy in recent years, CIOs have been successful in arresting this approach to cloud adoption. Ovum's *ICT Enterprise Insights 2017/18 – Global: ICT Spend and Sourcing* found that in North America, shadow IT spending was less than 10% in 52% of respondents, meaning 48% spent more than 10% on shadow IT. This compares to the previous year's research where 47% in North America reported spending less than 10%, and 53% spent more than 10%. While many organizations have many different suppliers, the new use of cloud computing is more strategic and focused on a small number of key suppliers.

The other major shift that has happened in the last 12 months is in the approach to migrating workloads to the cloud. Initially, the workloads were mainly business-productivity workloads such as email. Ovum research (*ICT Enterprise Insights 2017/18 – Global: IoT, Cloud, and AI*) found 28% of respondents stating that ERP, CRM, and databases are a target for 2018 to move to the cloud. The approach to moving these workloads to the cloud is not simple, and most organizations are adopting one of three main migration plans. The most popular approach is to use hybrid cloud as the bridge to migrate the workloads. The second most popular is to adopt a SaaS solution. The least popular is rewriting the workloads as cloud-native. Much of the reluctance to rewrite workloads is due to a skills shortage in cloud-native languages. The hybrid cloud approach is most popular because this involves the move to an on-premises hybrid cloud from where any rewrite can take place in the future.

The impact of these two shifts in cloud adoption has created the need for greater visibility and control over all the environments used. The market in multicloud and hybrid cloud management is still evolving, and many of the vendors come from the virtualization management space. While this seems a sensible evolution, the challenge is that the new cloud-native workloads (those already in the cloud) do not look like or operate in the same way as VMs. The difference in the way in which containers and VMs need to be managed has created a confusing market, where older established vendors are trying to blend cloud-native management into existing process flows, and new cloud-native vendors are struggling to integrate older technologies into their solutions. This multimodal world will be the reality

for a number of years, as organizations slowly move the majority of workloads to the cloud, and many to cloud-native. However, some physical workloads will remain because not everything will move to the cloud. Organizations must therefore balance the management tools bias toward their specific needs in terms of the percentage of workloads in each category type. Ovum expects this to change as the market matures over the next two or three years.

Key findings

- VMware is the clear overall leader with an average combined score of 7.56 out of 10 for all three dimensions.

- DXC, Micro Focus, and Oracle are the other leaders, with all recording strong technical scores. DXC and Micro Focus are the only vendors to score over 8 out of 10, with DXC recording 8.45 and Micro Focus 8.80. Oracle was third in the technical dimension with 7.66.

- IBM delivered a strong technical performance and was third overall in that dimension.

- Platform9 recorded the most maximum 10 out of 10 category-leading scores, with four out of the 20 available.

- Cloudcheckr was second in the execution dimension, and above average in market impact, but was let down by a weak technical dimension.

- CA Technologies, Cisco, Microsoft, and Red Hat all delivered solid performances that delivered an average combined score in line with the average.

Market and solution analysis

Ovum Decision Matrix: Multicloud and Hybrid Cloud Management, 2018–19

The multicloud and hybrid cloud management market is evolving rapidly, and the vendors in this space have come from a wide range of backgrounds, the most common of which is an evolution of traditional infrastructure or systems management. However, in this ODM, Ovum sees these traditional vendors being challenged by newer entrants with approaches that were developed in the cloud era. These challengers are driving some innovative solutions designed to deal with the challenges of operating in a heterogeneous and multimodal IT service delivery environment.

Figure 1 show the results of the ODM, with DXC, Micro Focus, Oracle, and VMware the leaders, and the challengers and followers closely grouped and separated by the technology dimension. Figure 2 shows the expanded bubble chart, where the leaders are split into two separate groups. Oracle and VMware are stronger in terms of execution, while DXC and Micro Focus are stronger in terms of technical capability. The challengers are similarly separated, with Microsoft a strong all-rounder, IBM strong in terms of technical capability, and Platform9 strong in terms of execution.

Figure 1: Ovum Decision Matrix: Multicloud and Hybrid Cloud Management, 2018–19
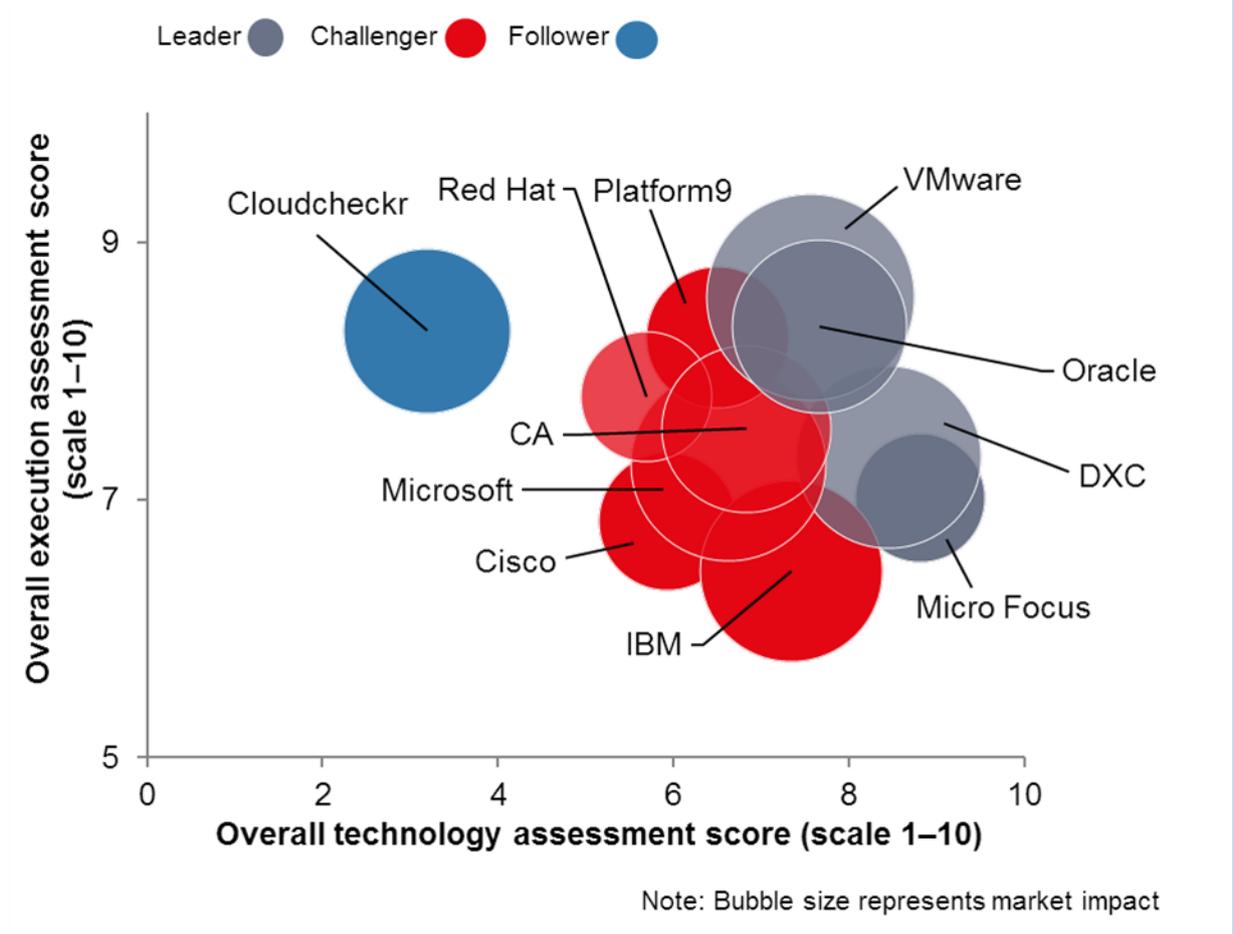
Source: Ovum

Figure 2: Expanded view of Ovum Decision Matrix: Multicloud and Hybrid Cloud Management, 2018–19
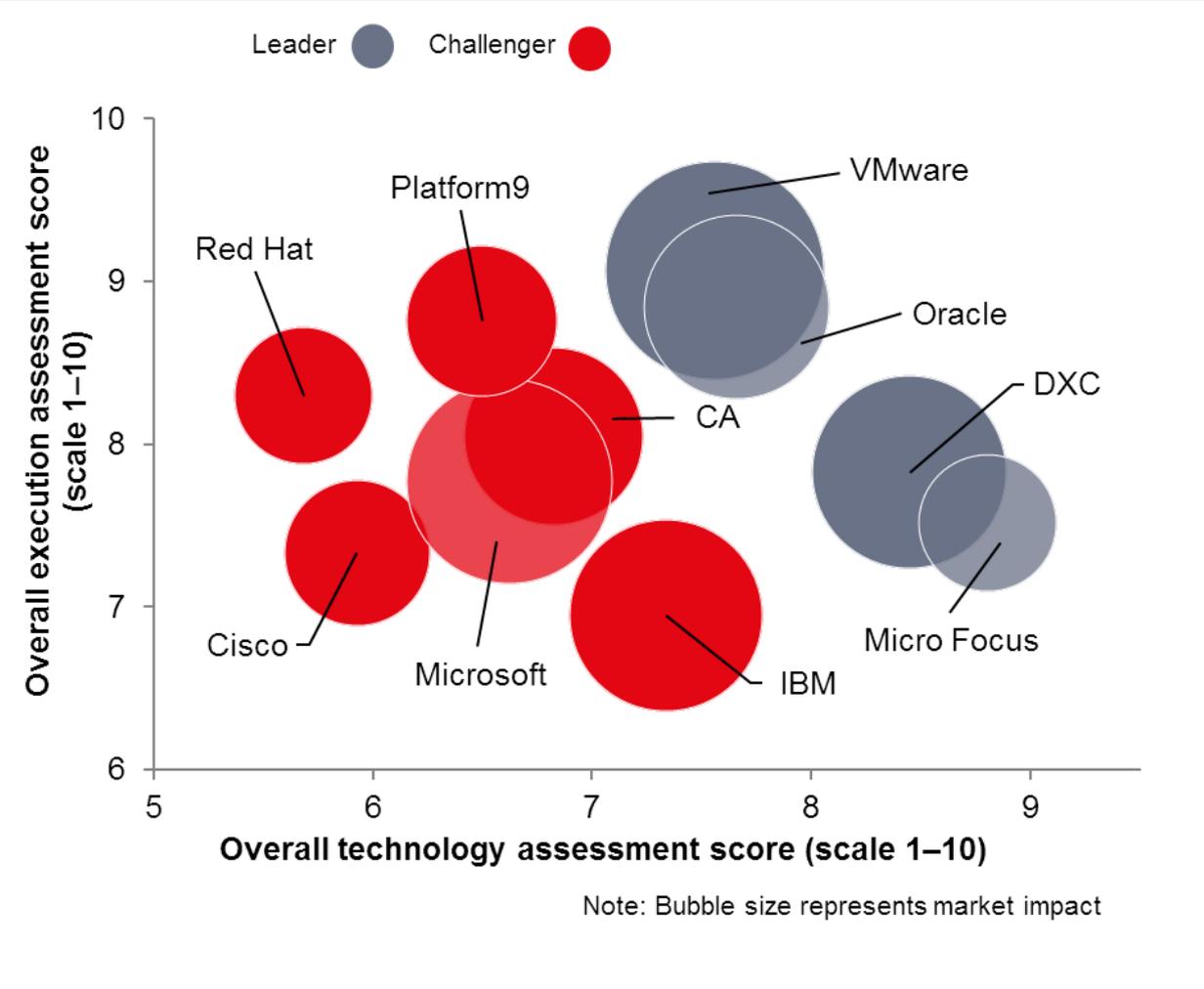
Source: Ovum

Table 1: Ovum Decision Matrix: Multicloud and Hybrid Cloud Management, 2018–19

Market leaders	Market challengers	Market followers
DXC	CA Technologies	Cloudcheckr
Micro Focus	Cisco	
Oracle	IBM	
VMware	Microsoft	
	Platform9	
	Red Hat	

Source: Ovum

Market leaders: DXC, Micro Focus, Oracle, and VMware

The market leaders demonstrated consistency, with each recording at least 14 above-average scores, including at least four category-leading scores out of the 20 categories evaluated. This group also scored a combined group average score for all dimensions of 7 out of 10, compared to the average of 6.54. The leaders demonstrated a breadth of coverage in terms of their ability to execute and deliver the technical features needed to operate in a multicloud environment. However, this group were split by their areas of strength. The technical leader was Micro Focus with an average score of 8.80 out of 10, DXC was second with 8.45, Oracle third with 7.66, and VMware fourth with 7.56. The execution leader was VMware with 8.57 out of 10, and the market impact leader was VMware with 6.55 out of 10. The leaders also demonstrated a good mix of technical capability and the ability to execute. Ovum believes the leaders should always be considered for shortlisting, because they offer the most consistent performance.

Market challengers: CA Technologies, Cisco, IBM, Microsoft, Platform9, and Red Hat

The market challengers are categorized as delivering a combined average performance in line with the average of approximately 6 out of 10. The other aspect that differentiates them from the leaders and followers is the number of scores greater than 20% below average. The leaders recorded no more than three category scores that fell more than 20% below average, while the challengers recorded between four and six such scores, with the followers recording more than eight. Overall, the challengers showed that their solutions were less consistent than those of the leaders, but in some categories, they were equal or better than those of the leaders. The ODM is based on treating all categories as equally weighted, but for many organizations this will not be the case, which is why the *Ovum Decision Matrix interactive (ODMi)* enables the user to adjust the weightings to reflect specific needs. Ovum believes that challengers should be considered for shortlisting based on using the ODMi to match requirements to vendor capabilities.

Market followers: Cloudcheckr

Followers are classified as showing significant weaknesses in more than 50% of the categories. They are usually specialist vendors that have a particular focus, or new-entrant vendors with an early release solution that lacks some of the required capabilities. Cloudcheckr, which is the only follower in the ODM, is a specialist vendor that is moving from a monitoring and reporting solution toward a full management solution, and therefore lacks some of the features of the more established vendor solutions.

Market leaders

Market leaders: Technology

Figure 3: Ovum Decision Matrix: Multicloud and Hybrid Cloud Management, 2018–19: Technology
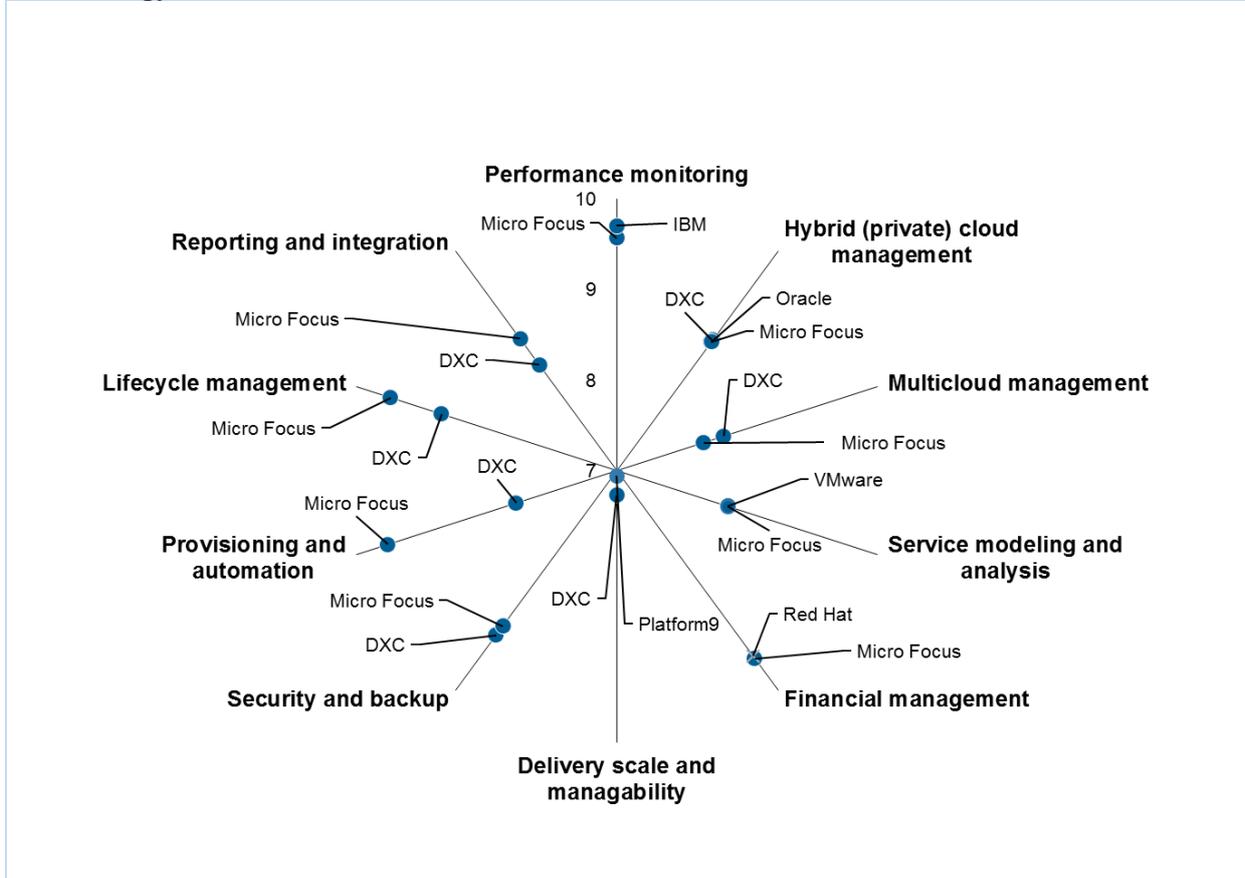
Source: Ovum

Figure 3 shows the top two vendor scores per category in the technology dimension. DXC and Micro Focus dominate this with seven and nine entries respectively. The only other vendors with a single entry are IBM, Oracle, Platform9, Red Hat, and VMware. This demonstrates the technology dominance of DXC and Micro Focus.

Market leaders: Execution

Figure 4: Ovum Decision Matrix: Multicloud and Hybrid Cloud Management, 2018−19: Execution
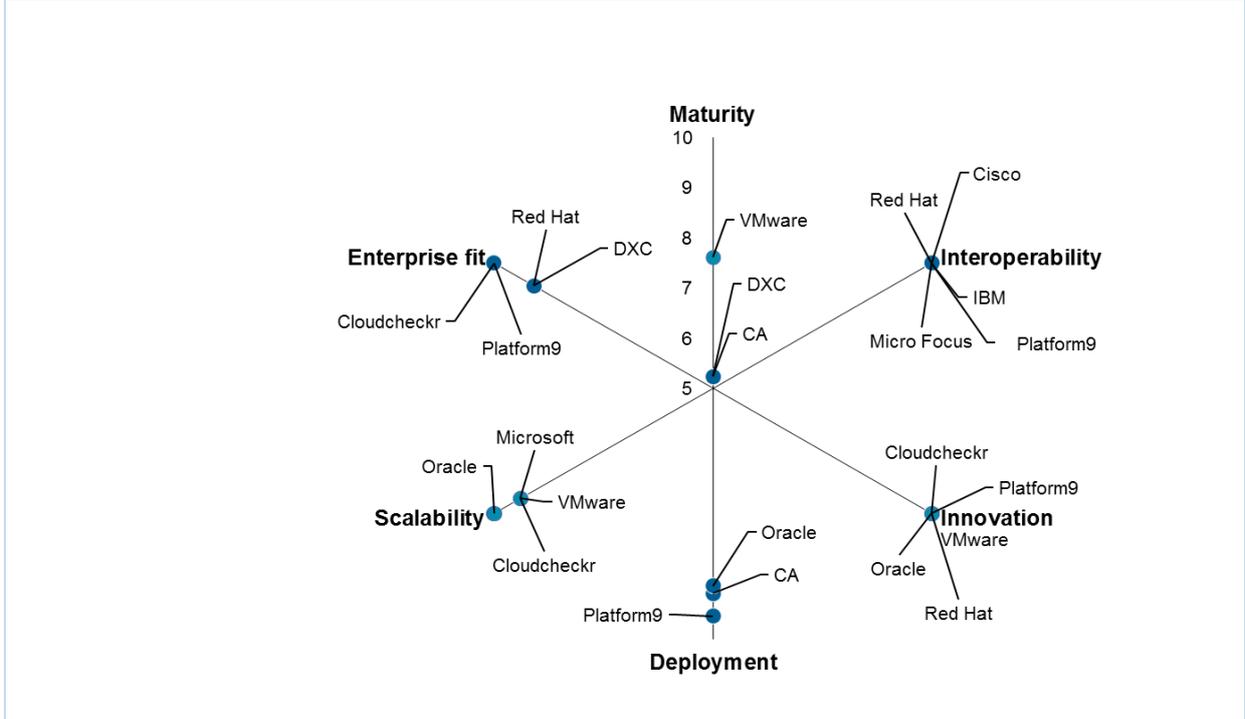
Source: Ovum

Figure 4 shows the top two entries per category in the execution dimension. All vendors are represented at least once in this category. CA Technologies has two entries, Cisco one, Cloudcheckr three, DCX two, Micro Focus one, IBM one, Microsoft one, Oracle three, Platform9 four, Red Hat three, and VMware one.

Market leaders: Market impact

Figure 5: Ovum Decision Matrix: Multicloud and Hybrid Cloud Management, 2018–19: Market impact
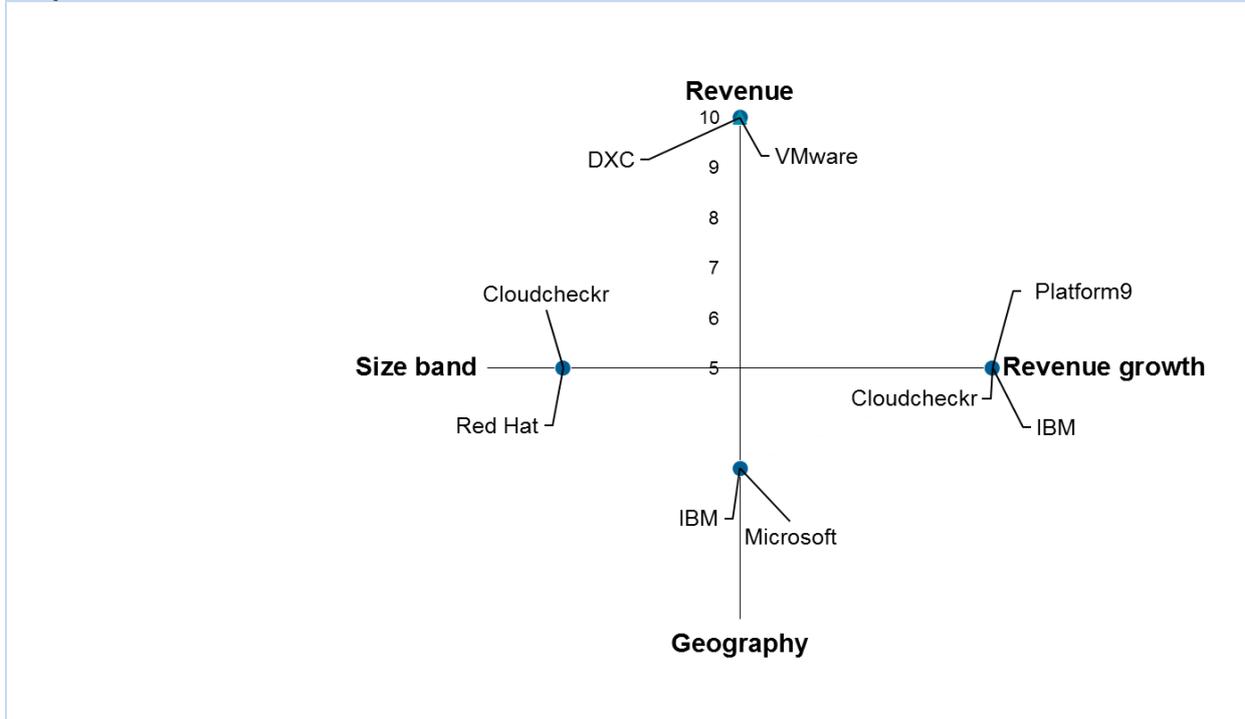
Source: Ovum

Figure 5 shows the top two scores per category in the market impact dimension. Cloudcheckr and IBM have two entries each, and DXC, Microsoft, Platform9, Red Hat, and VMware all have a single entry.

Vendor analysis

CA Technologies (Ovum recommendation: Challenger)

Figure 6: CA Technologies radar diagrams
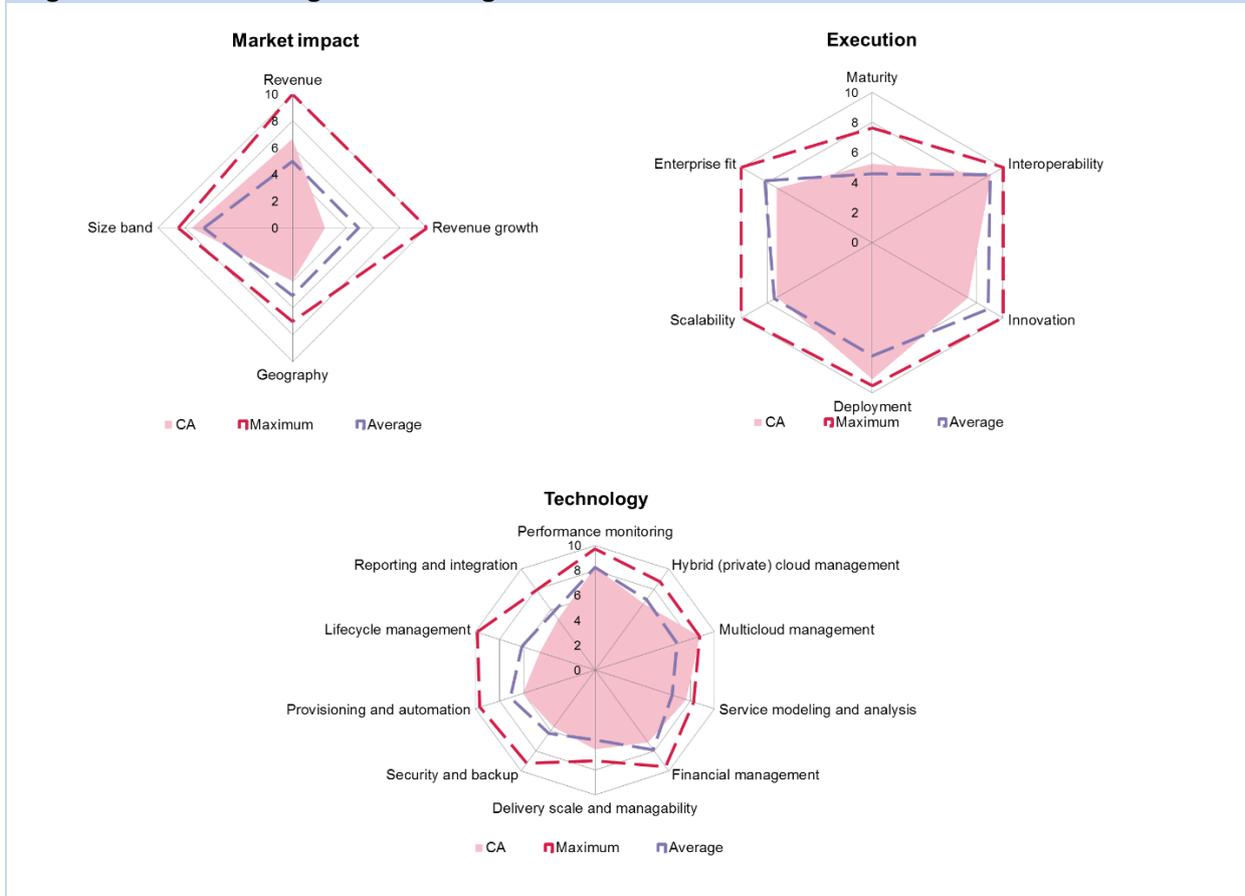
Source: Ovum

Products

Unified Infrastructure Management

ODM Analysis

CA Technologies delivered a good overall performance, with 12 above-average scores out of the 20 categories evaluated. CA Technologies' strongest performance was in the execution dimension, where it recorded a dimension average score well above the average. Its overall rating was, however, affected by too many average ratings, with too few significantly exceeding average ratings in the technology dimension.

Strengths

Performance monitoring on a wide range of technologies

CA Technologies has a very comprehensive monitoring capability, from virtual to physical environments. Ovum likes CA Technologies' approach to monitoring where it has a central core capability, and new technologies such as containers are supported by either an agent or agentless

integration. CA Technologies' score was in line with the average, but was particularly strong in identifying resource-hungry workloads in both VMs and container environments.

Lifecycle management enables DevOps to become operationally adopted

When organizations say they are using a DevOps approach, they typically mean they are using an agile development process and sharing information with the operational teams. CA Technologies' management solutions come from a heritage in operational management, so the ability to support this information and process sharing between the development and operational teams is a critical capability that provides the correct environment for DevOps to flourish. Ovum likes the approach CA Technologies has taken to modularize its solutions. The lifecycle capability is not provided by the core multicloud management product, but it is delivered by an adjacent solution that is fully integrated. This flexibility enables organizations that have adopted DevOps to take advantage of these capabilities while not being forced to follow a prescribed approach.

Service modeling provides organizations with the ability to understand the impact of business change

CA Technologies has always had good capabilities in terms of the ability to model services and allow capacity planning to be performed. It scored above average in this capability by some significant degree, at least 20 percentage points above the average.

Weaknesses

Restricted choice of CMDB integration technologies

Compared to other vendors, CA Technologies has a limited CMDB integration capability. While it is possible to use the APIs to read and write information from other CMDBs, only one is fully supported. Ovum does not believe this is a major weakness, but it is an area that CA Technologies needs to address, particularly because end-user organizations typically do not frequently change CMDBs due to the complexities and costs involved.

Cisco (Ovum recommendation: Challenger)

Figure 7: Cisco radar diagrams
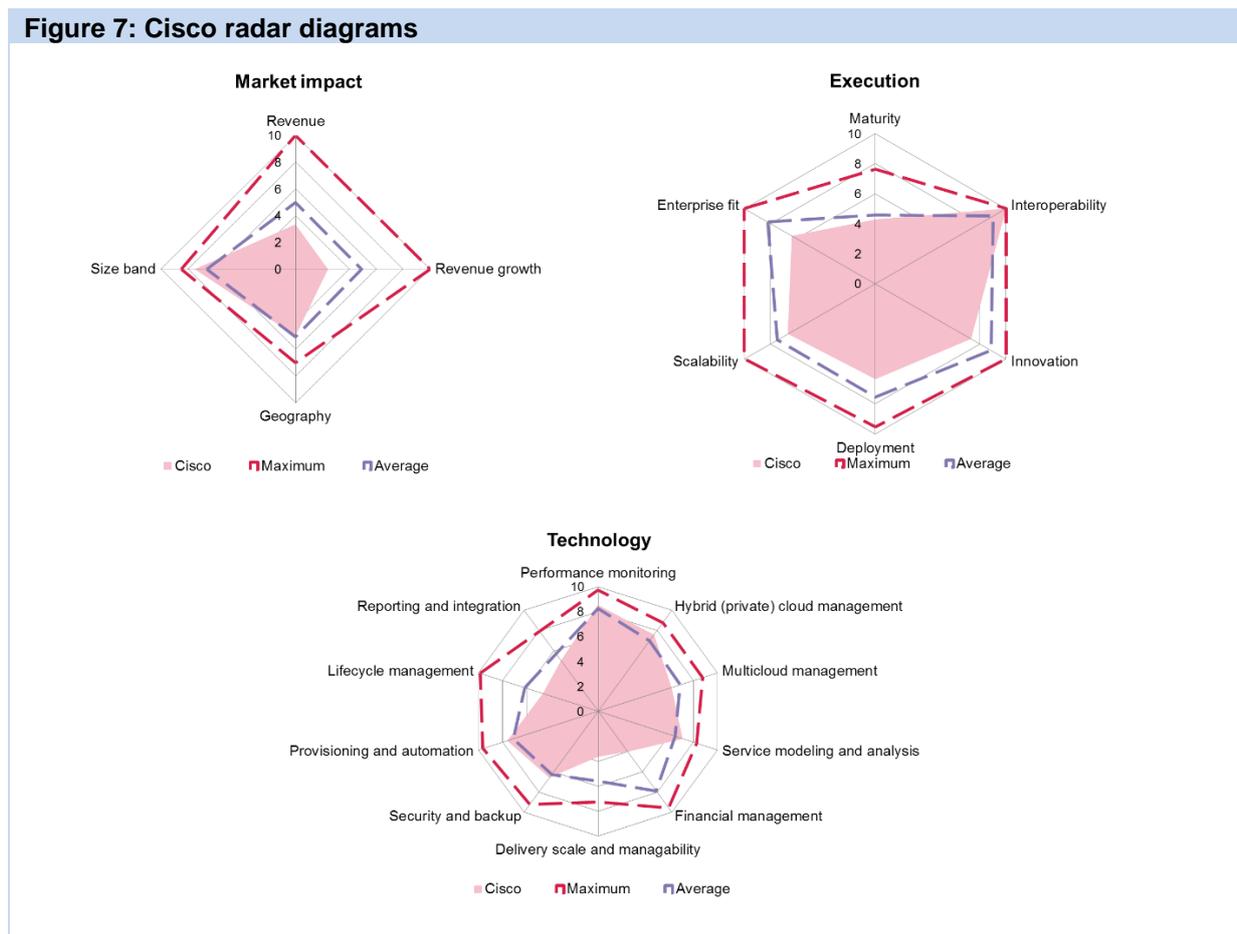
Source: Ovum

Products

CloudCenter

ODM Analysis

Cisco scored seven above-average scores and one category-leading maximum score (for interoperability). Overall, Cisco's performance was in line with the average for the ODM. Its best dimension was technology, where it recorded five above-average scores and had an overall above-average rating. Cisco was strong in terms of performance monitoring, hybrid management, and service modeling and analysis, but was let down by below-average capabilities in three categories (lifecycle management, financial management, and delivery scale and manageability).

Strengths

Performance monitoring on a wide range of technologies

In a multicloud environment, the ability to monitor the performance of workloads of different types, cloud-native or legacy, from a single console is a key requirement. Cisco CloudCenter supports one of the widest ranges of different monitoring capabilities, and scored above average in this category. Ovum particularly likes its abilities in terms of containers where Cisco provides a comprehensive

monitoring capability. Cisco is let down by an only average capability to monitor the licenses. Ovum believes a partnership with a specialist vendor could greatly enhance Cisco's capabilities here.

Private cloud management includes all the core capabilities

When considering a cloud management solution, the private cloud is often overlooked or the infrastructure-related tasks ignored. Cisco CloudCenter has a solid heritage in infrastructure management that has been exploited and now appeals to a wider set of private cloud technologies. Cisco scored above average in this category and has a depth of management in all the major disciplines (network, storage, CPU, and services).

The ability to provision a multitude of technologies automatically is a core tenet of management in the cloud era

Cisco CloudCenter scored above average in ODM on MCM in terms of its ability to use automation to reduce the manual processes involved in day-to-day deployment of services. Cisco supports a wide range of hypervisor technologies as well as bare metal. This is an important capability because it enables organizations to select the type of environment needed to match the workload characteristics. Not all workloads will require the same environment, so automating across different environments reduces the complexity in terms of the skills and time needed.

Visibility of utility usage is critical to making financial decisions

When people think of the cloud they assume that it is like a utility, something you turn on and off as needed. While this is true for some cloud environments, it is not true for all. As part of Cisco's multicloud portfolio, Cisco CloudCenter scored above average because it goes down to the energy consumption level. The ability to link energy usage to a service, and to therefore model the service profile in terms of performance, cost, and risk, is a significant strength.

Weaknesses

Limited capabilities in asset discovery

Cisco's main weakness is the lack of a comprehensive asset discovery capability. One of the key areas that Cisco CloudCenter is unable to perform is the ability to link the SLA of any service to a specific VM, and therefore to understand the impact of this on the delivery of the service from this specific environment. However, this is a minor weakness in terms of the overall capabilities, and Cisco partners with ITSM tools including ServiceNow to manage the SLA. CloudCenter can have SLAs as tags for automated on/off for the VMs. For example, if someone chooses a development environment, the VMs may be automatically suspended during night hours, then turned back on before users return to work. Production environments could have SLA represented by no suspension, but allowing for dynamic auto scaling to ensure proper performance.

Restricted patch-management capabilities

Compared to some competitors in the ODM, the range of patch-management capabilities is restricted (Cisco Cloud Center can only patch a running VM). Ovum does not consider this a major weakness because Cisco partners with Puppet, Chef, and Anisble configuration management tools through a native integration.

Cloudcheckr (Ovum recommendation: Follower)

Figure 8: Cloudcheckr radar diagrams
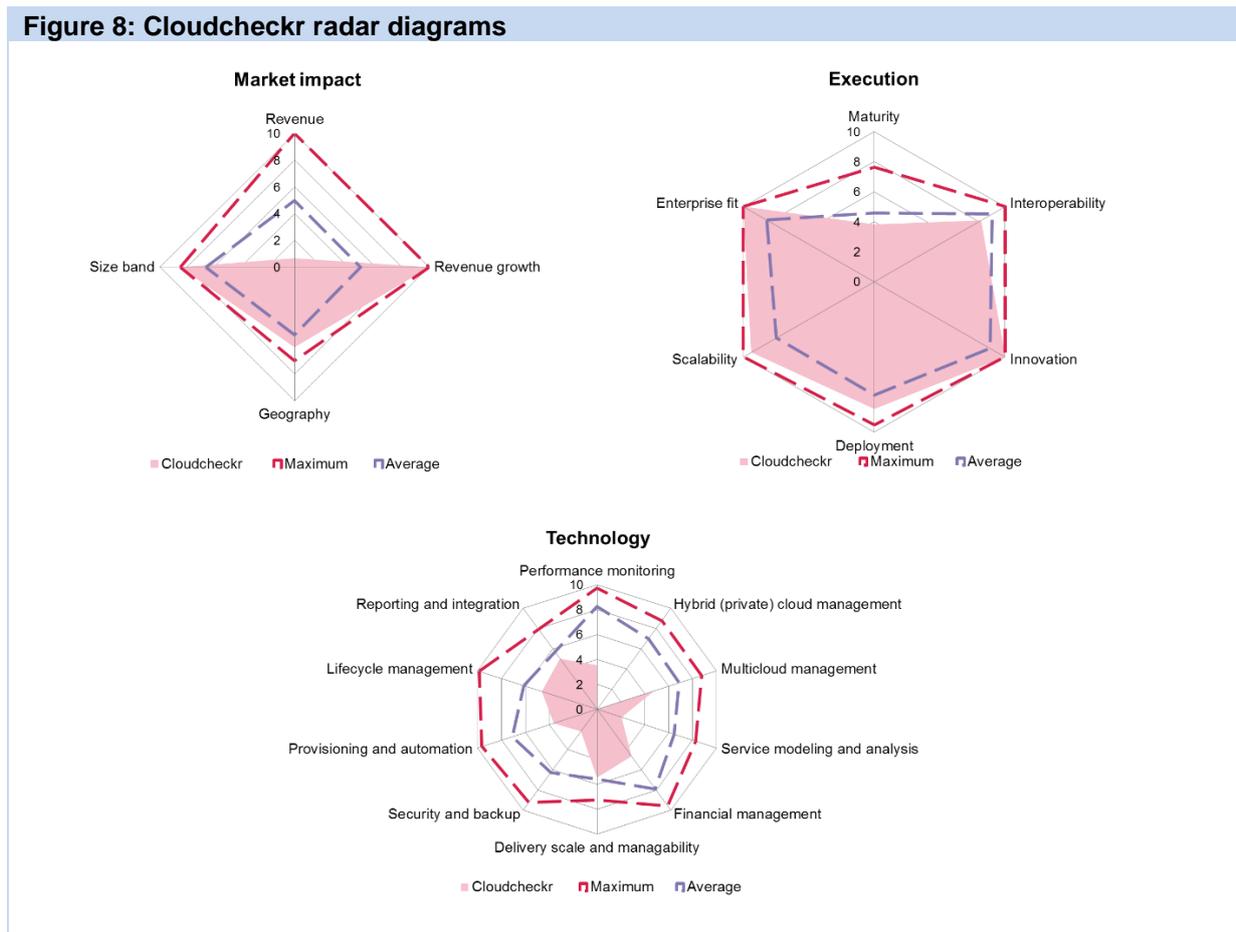
Source: Ovum

Products

Cloudcheckr

ODM Analysis

Cloudcheckr is first and foremost a cloud-monitoring solution that is expanding into management. Its weakness in the management capabilities contributed to its overall below-average performance in the technology dimension. Cloudcheckr's best dimension was execution, where it recorded four above-average category scores out of the six categories evaluated. Three of these were category-leading scores, with two of them maximum scores.

Strengths

Financial management and reporting is a core strength of Cloudcheckr

Cloudcheckr's core strength is its ability to manage the financial attributes of cloud services, and to report this information to the CIO. In this category for the ODM, Cloudcheckr scored just below the average. The range of different cloud providers that can be monitored, managed, and reported on covers AWS, Google cloud platform, Microsoft Azure, and Oracle. Cloudcheckr also enables all the core VM management capabilities to be performed, but this is only on one hypervisor technology, which Ovum would like to see extended to at least the top two.

Cost-optimization is only half of the CloudCheckr feature set. Security and compliance tools, including self-healing automation, make up a large part of the value of CloudCheckr. The cost of a security breach can far outweigh the cost of a cost savings tool, so this functionality is significant and can minimize the number of vendors a cloud customer must work with.

The ability to scale and deliver its solution is as good as some much bigger rivals

Cloudcheckr was class-leading in the ODM for its ability for a single IT administrator to monitor and manage workloads, either containers or VMs. This translates to a benefit in terms of the resources required by the CIO, and represents a significant cost saving compared to its rivals. However, the fact that Cloudcheckr only supports a single hypervisor means its target customer base is limited, albeit to the dominant technology in the market.

Cloudcheckr's ability to execute was rated highly

In the ODM, Cloudcheckr scored an impressive three category-leading scores in the execution dimension, and was second overall. Ovum believes much of this strength is because Cloudcheckr is a born-in-the-cloud company that is exploiting these capabilities.

Weaknesses

Management of private cloud infrastructure

Cloudcheckr is a born-in-the-cloud vendor that therefore lacks the heritage and capability to manage the core infrastructure layer. Ovum does not consider this to be a significant weakness, because it expects 70% of workloads to be in the cloud within five years. However, for today's market, where only 30% of workloads are in the cloud, this represents a shortcoming for many organizations. Ovum believes that Cloudcheckr should partner with an established provider so that it can support customers as they make the journey to a mostly cloud environment.

The modeling of services is restricted in its scope

Cloudcheckr also has a shortcoming when it comes to modeling the services, particularly in the physical environment. Again, Ovum believes this is a transition-related weakness that will become redundant in the future, but for customers just starting the cloud journey, it represents a weakness.

DXC (Ovum recommendation: Leader)

Figure 9: DXC radar diagrams
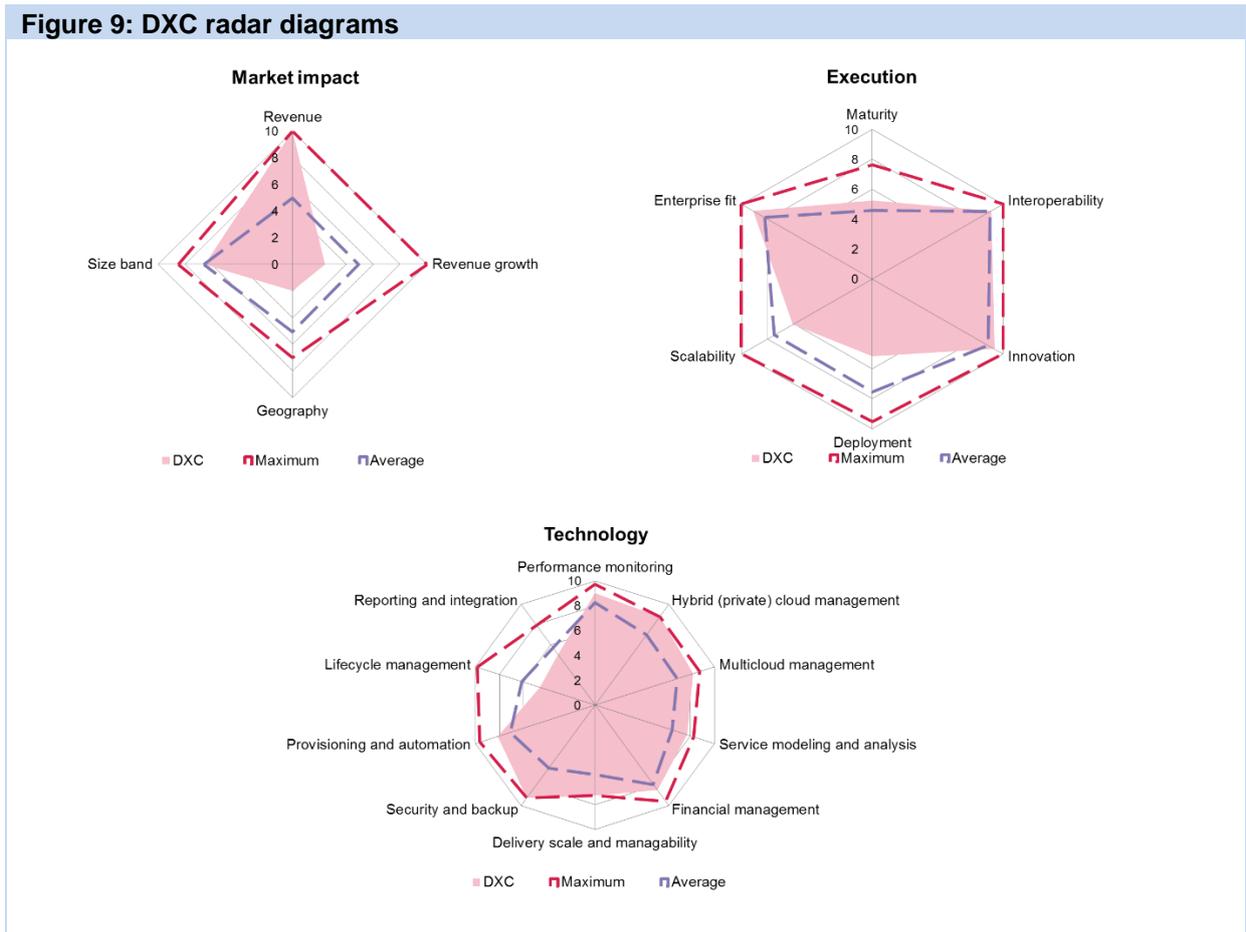
Source: Ovum

Products

Agility Platform

ODM Analysis

DXC recorded 15 above-average category scores of the 20 evaluated, and five of these were category-leading scores. DCX's best dimension was technology, where it was second overall with a dimension average score of 8.45 out of 10, compared to the average of 6.78, and the dimension leader's score of 8.80. DXC was above average in each of the three dimensions (one of only three vendors to achieve this), with its only major weakness attributed to its geographic presence (as determined from its financial reporting on revenue by region). However, as the solution becomes more widely adopted, this will eventually correct itself and become more representative.

Strengths

Security and backup is a key strength of DXC

In the ODM, DXC was the category leader in security and backup. Ovum was particularly impressed by DXC's strength in the backup category, where it provided capabilities for backup and recovery in virtual environments, clustered environments, continuous data availability, file level replication, and

tiered backup/recovery. Another area where DXC provides capabilities that other vendors lack is in lock-step technology for a true fault-tolerant solution.

Providing a comprehensive private cloud management capability is an often-overlooked capability

DXC was also a category leader for private cloud management. DXC provides a comprehensive management capability across physical and virtual infrastructure, where it relies on an integrated third-party solution in only the network management aspect. The ability to manage the infrastructure of an on-premises private cloud is an area that is often overlooked, but while 70% of current workloads (*Ovum ICT Enterprise Insights Cloud Survey 2017*) are on-premises, this is an important aspect that must be part of any wider multicloud management solution.

Supports a wide selection of public cloud providers

DXC was the clear category leader in multicloud management, where its breadth of cloud providers supported was one of the most comprehensive. DXC provides formal integration with public and private cloud providers, such as AWS, Microsoft Azure, VMware, vSphere, and SoftLayer. In addition, the platform provides integrations with other service providers, including VirtuStream, NSX, F5, and Bluecat. DXC also provides a robust API to integrate with many other providers.

Supports a wide selection of operating environment

DXC provides support for monitoring and management of several operating environments, including Windows, Hyper-V, AIX, Solaris, HP-UX, RHEV, OS/400, Z/OS, Oracle VM, VMware, Parallels, and Xen/Xenserver. In terms of operational efficiency, DXC reported that a typical VM administrator could use its solution to manage more than 500,000 VMs.

Weaknesses

DXC is a recent entrant to the market and needs to build up its market awareness

The maturity of a solution is typically defined by how long it has been available and how well it meets the market's needs. DXC has a well-balanced solution, but DXC is a relatively new company, even though it was born from two well established parents. DXC suffers from a lack of market awareness of its capabilities, and although it has made good progress, Ovum believes there is still some way to go.

DXC's deployment time is slightly longer than that of competitors

While according to the ODM, DXC's deployment times were not excessively long, they were on average slightly longer than the average. This difference was most noticeable in the small and medium-scale deployments, whereas for large and global deployments, DXC was in line with the average.

IBM (Ovum recommendation: Challenger)

Figure 10: IBM radar diagrams
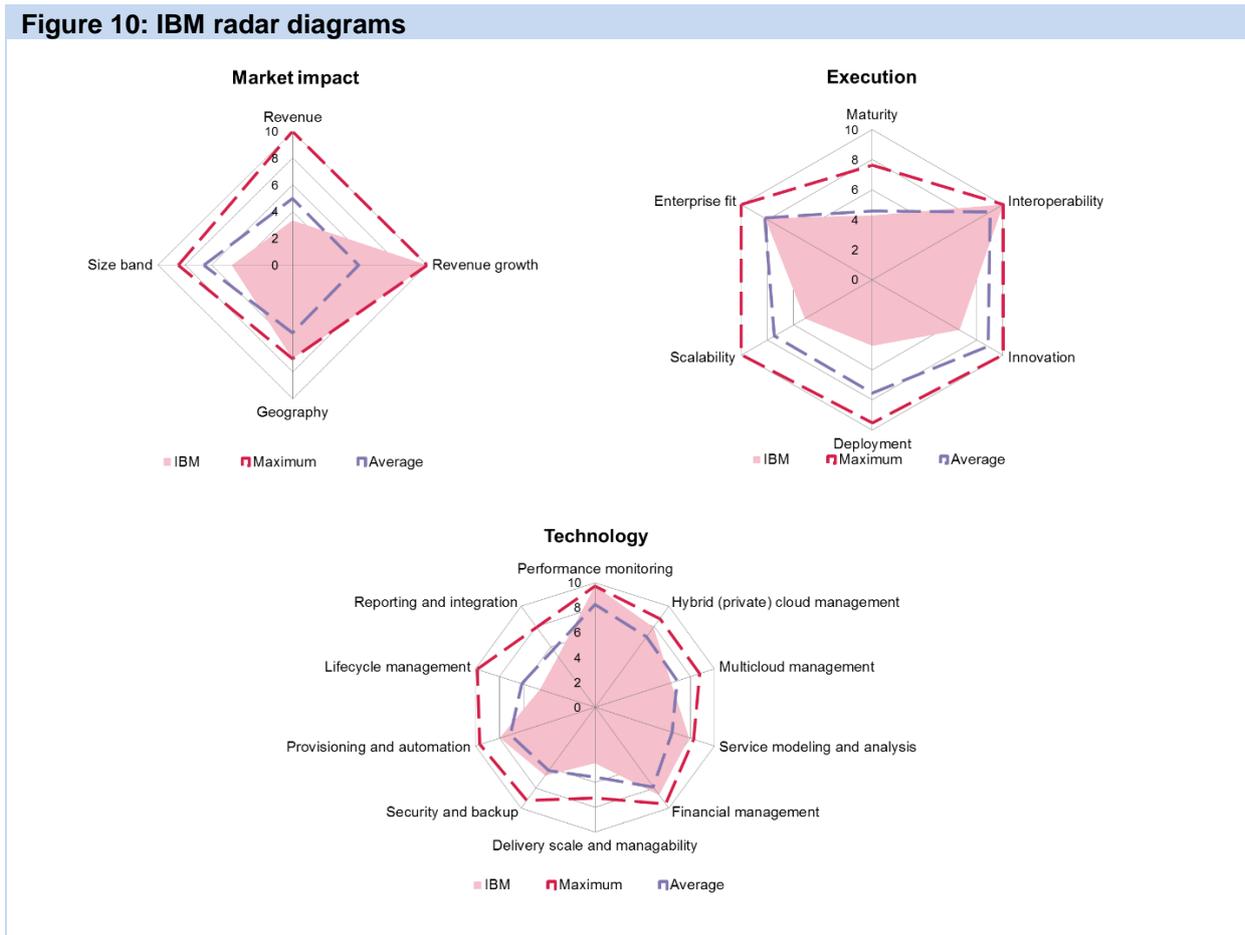
Source: Ovum

Products

Cloud Automation Manager

ODM Analysis

IBM recorded 12 above-average category scores out of the 20 evaluated, with four category-leading scores, and two maximum scores. IBM's best dimension was technology, where it recorded an average score of 7.34 out of 10 compared to the average of 5.73. IBM was let down by some average performances in the execution dimension, where its overall average score was slightly below average.

Strengths

Performance monitoring across a wide range of different elements

IBM was a category leader in performance monitoring. The strength of IBM comes from its ability to monitor many different levels, from the base infrastructure to the abstracted container. Complete visibility in multicloud management is also required if organizations are going to be able to obtain optimum operational efficiency.

Supports both showback and chargeback for a wide range of deployment options

IBM demonstrated a well above average performance in terms of financial management, and was second overall in the category. Where IBM differentiated itself from many of the other vendors was in its ability to provide both showback and chargeback for many of the different scenarios. Ovum was particularly impressed by IBM's ability to monitor the financial aspect of containers over time.

Multiple choices for deployment options

IBM's solution is available in several different deployment options. It supports containers deployed from a master gold copy, containers and VMs templated for more bespoke containers/VMs, deployments made on third-party public cloud providers, and automated deployment using a GUI workflow-like tool

Weaknesses

A lower than average number of different operating environments is supported

IBM supports only 50% of the available different operating environments, compared an average of 60%. While IBM covers most of the most popular operating environments, it does not provide support for key technologies such as RHEV and Oracle VM. However, while IBM does not support all the environments listed in the ODM, it does support more than 60 environments.

Micro Focus (Ovum recommendation: Leader)

Figure 11: Micro Focus radar diagrams
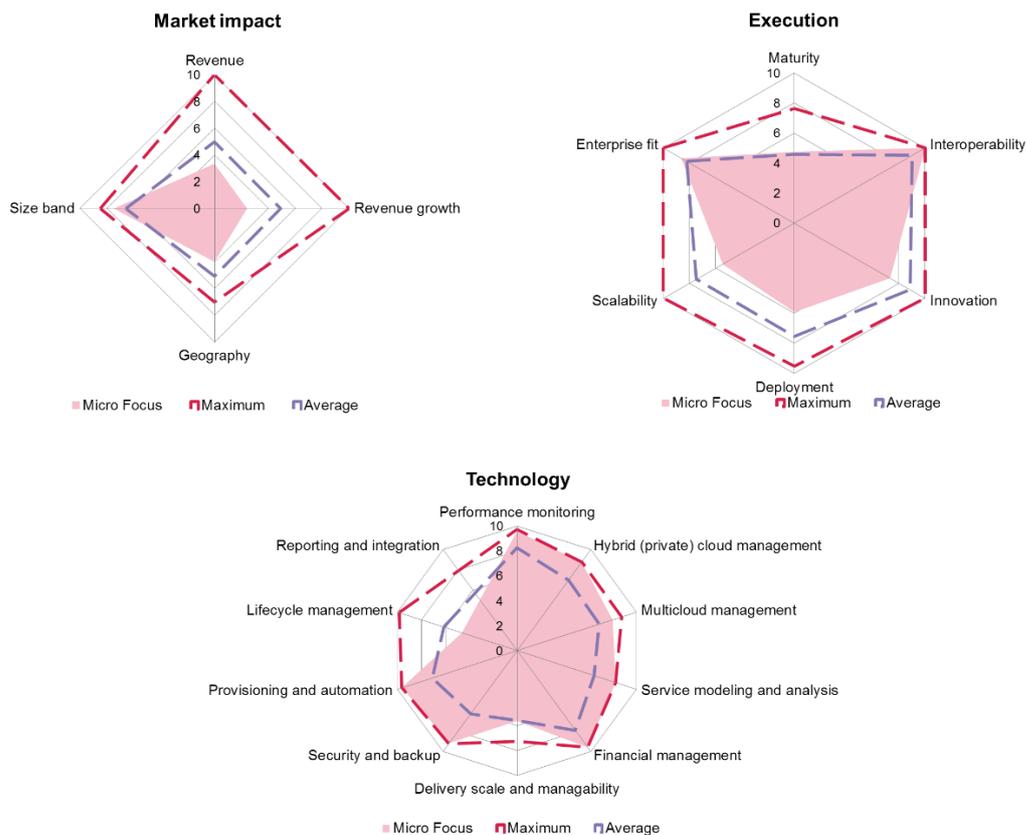
Source: Ovum

Products

Hybrid Cloud Management Suite

ODM Analysis

Micro Focus scored 13 category above-average scores, five of which were category-leading scores, including one maximum score. Micro Focus was the technology dimension leader with a score of 8.80 out of 10. All individual category scores were above average, including four category-leading scores. Micro Focus was weakest in the market impact dimension, which can be attributed to its recent acquisition of capability from HPE.

Strengths

Cloud-agnostic ability for the automation of provisioning workloads across clouds

In the ODM, Micro Focus was the category leader in automation and provisioning, with a score of 9.6 out of 10, compared to the average of 6.4 out of 10. One of the key differentiators is that the solution is available as both an on-premises and a SaaS solution and the customer can swap between these according to their specific needs/financial controls.

Managing the entire lifecycle enables greater visibility into the quality of service

Micro Focus was a category leader in lifecycle management in the ODM, and was particularly strong in terms of the flexibility to work with external service desks and CMDBs. Ovum believes that this is significant, because many organizations have existing solutions in this space and do want to change these just to fit with a cloud strategy. Micro Focus was also strong in terms of its patch-management capabilities, with its auditing of patches traceable to an individual.

Understanding the cross-platform financial implications of different cloud providers

Managing the costs of different providers has always been a top requirement of any multicloud management solution. Micro Focus was the category leader in the ODM, with a score of 9.6 out of 10 compared to the average of 7.2 out of 10. Micro Focus was particularly strong because it enables cost management of both containers and VMs, and provides both showback and chargeback for these.

Weaknesses

Market maturity and presence below average

Micro Focus recently acquired the software capabilities of HPE, and has been integrating these into its existing businesses. One of the challenges for Micro Focus is to address the change in brand associated with the HPE multicloud management solution. While Micro Focus scored in line with the average for market maturity in the ODM, this is a temporary situation caused by the acquisition and change of name.

Microsoft (Ovum recommendation: Challenger)

Figure 12: Microsoft radar diagrams
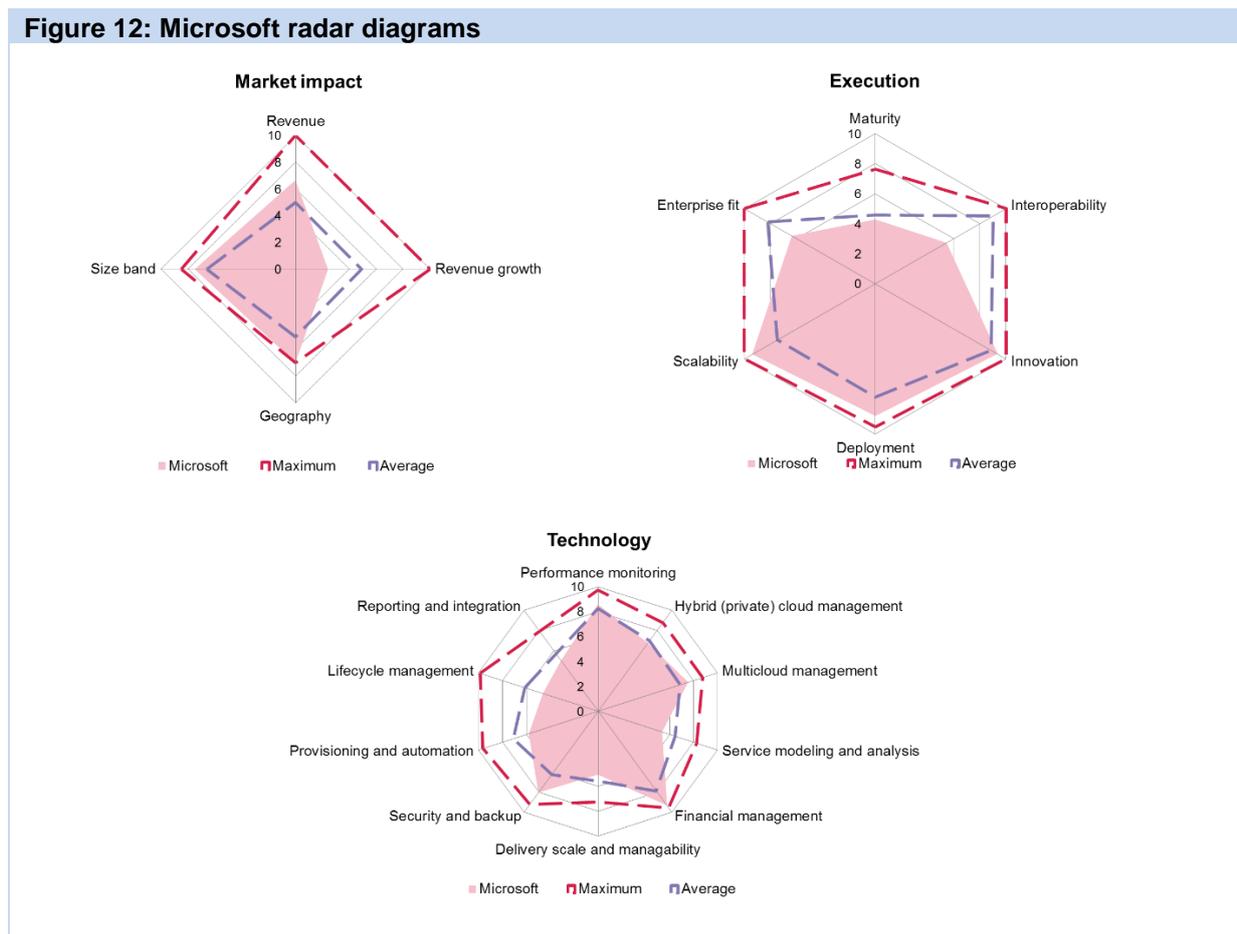
Source: Ovum

Products

Cloud Platform

ODM Analysis

Microsoft recorded 12 above-average category scores out of the 20 evaluated, with one category-leading score. Microsoft was one of the most consistent performers, and one of only three vendors with an above-average score for all three dimensions. Microsoft recorded 70% of Technology categories as above average, 80% of market impact categories as above average, and 66% of execution categories as above average.

Strengths

Strong performance-management capabilities across both VMs and containers

Microsoft scored well above average in the performance-monitoring category. Much of this was driven by Microsoft's ability to provide in-depth monitoring of the performance of VMs and containers. Managing the performance of workloads across all environments is a core ability of the Microsoft solution, and where Microsoft lacks the expertise, it partners with third-party specialist providers in an integrated solution. Ovum believes that this approach enables Microsoft to ensure it provides capability for new technologies as they emerge.

Private and public cloud management

One aspect where Microsoft scored above average was in terms of management of both the private cloud and public cloud categories. Microsoft scored slightly better in public (multicloud) environments than private (hybrid) clouds, but in both categories, Microsoft's score was well above average. Microsoft could support all the leading public clouds (except Virtustream) in terms of management and monitoring, and was the only vendor with this level of cross-platform capability.

Good financial management capabilities

Microsoft scored 9.33 out of 10 in the ODM, well above the average of 6.53, and just short of the category leader's score of 9.57. Microsoft is strong in its ability to perform both showback and chargeback for VMs and containers. It also provides the ability to analyze financial information and share it in a simple and understandable format.

Weaknesses

Below-average capabilities in lifecycle management

Microsoft performed weakly compared to others when it came to asset discovery and patch management. This was a surprising result given Microsoft's previous capabilities in the infrastructure management market. Microsoft did provide core functionality, but lacked some of the more refined capabilities.

Oracle (Ovum recommendation: Leader)

Figure 13: Oracle radar diagrams
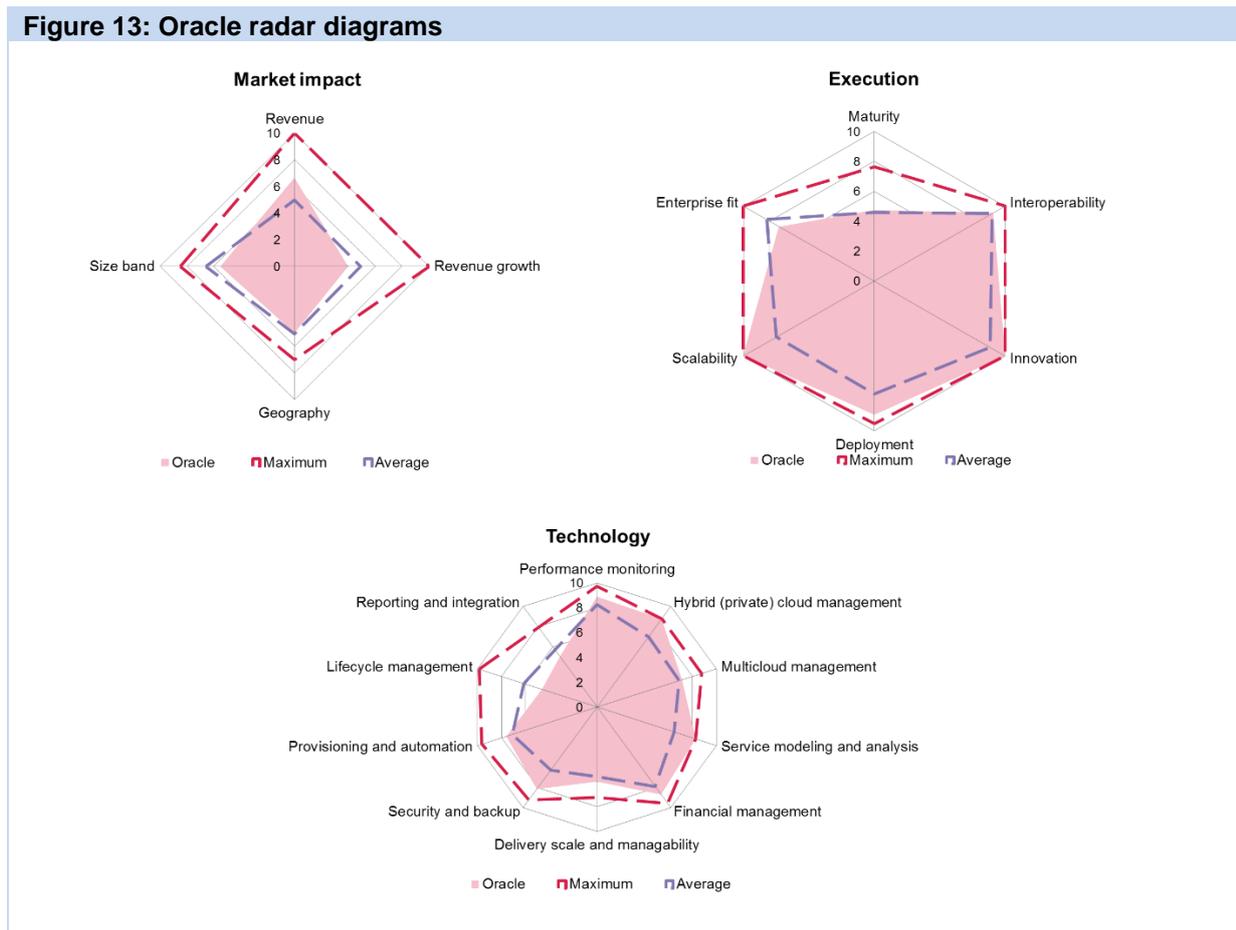
Source: Ovum

Products

Oracle Management Cloud

ODM Analysis

Oracle recorded strong scores in the execution and market impact dimensions, where it was above the dimension average. However, it was in the technology dimension where it was above average in all categories. Overall, Oracle recorded 17 above-average category scores out of the 20 evaluated, and two were category-leading (both maximum 10 out of 10) scores.

Strengths

Performance monitoring across a wide range of different elements

Oracle scored in line with the average in the performance-monitoring category. The strength of Oracle comes from being able to monitor at different levels, from the base infrastructure to the abstracted container. Its weakness is in its lack of financial-monitoring capabilities. If this section is excluded, Oracle is above average.

Supports a wide range of cloud providers in the multi cloud category

Oracle surprisingly scored above average in multicloud management and below average in private cloud management in the ODM. Oracle was the most open of all the vendors, supporting more than 10 different virtualization technologies from a management and monitoring perspective. Oracle's performance in private cloud management was mainly provided by third-party integrated solutions, meaning it scored slightly below average.

Weaknesses

Perception that Oracle lacks clarity in its licensing options

Oracle has very few technical weaknesses in terms of those identified in the ODM, but Oracle's pricing and licensing options were considered complicated and lacking clarity. Oracle has announced a new flexible approach, financial segregation, to help customers solve this dilemma. Financial segregation reduces complexity by enabling a budget to be defined. It can also be used to consume any service in the IaaS and PaaS catalogue as they are needed, eliminating the need for forward knowledge of exactly what will be required.

Platform9 (Ovum recommendation: Challenger)

Figure 14: Platform9 radar diagrams
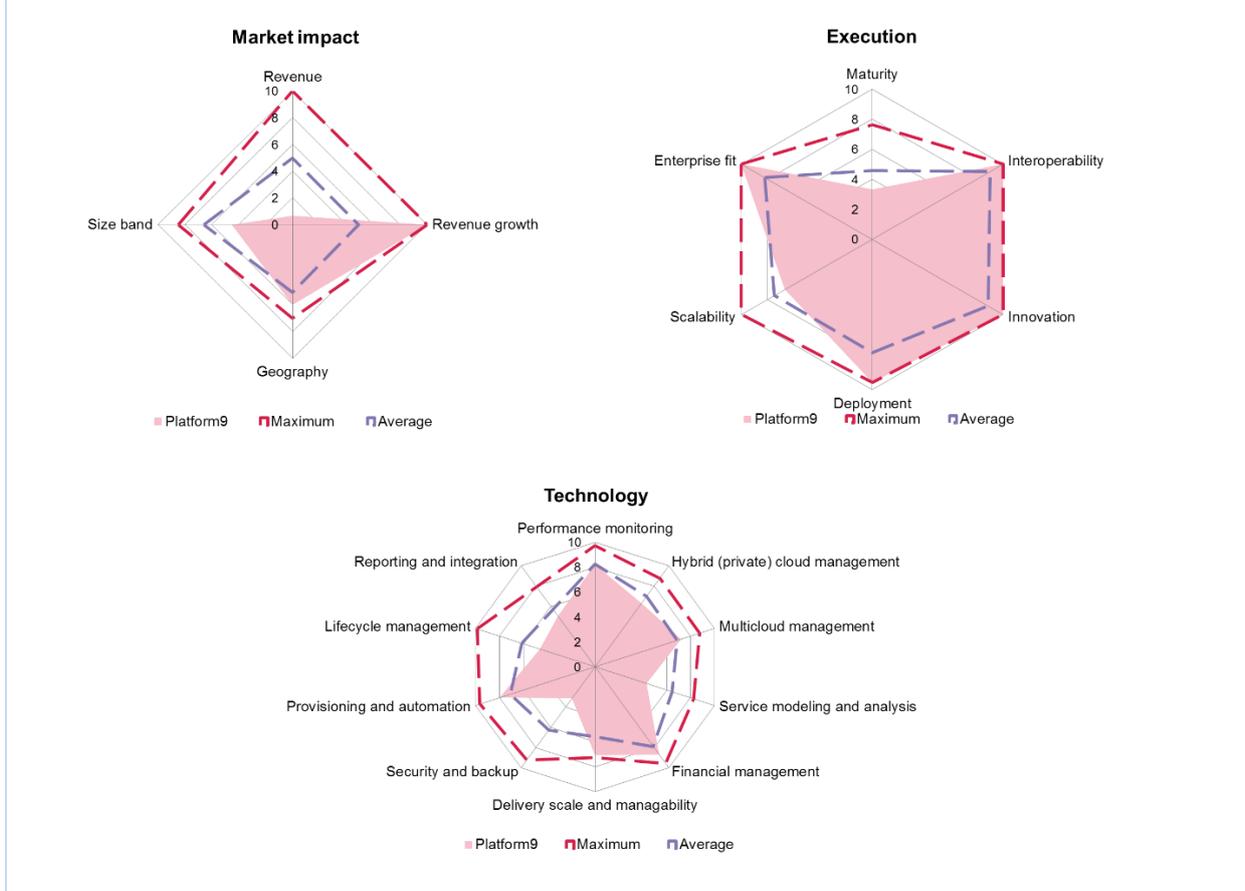
Source: Ovum

Products

Platform9

ODM Analysis

Platform9 recorded 12 above-average scores out of the 20 categories evaluated, five of which were category-leading scores (four a maximum 10 out of 10). Platform9 was strongest in the execution dimension, where it recorded a dimension average of 8.26 out of 10, compared to the average of 6.95 and the dimension leader's 8.57. Platform9 performed consistently with its below-average scores only slightly below the average.

Strengths

Strong financial management capabilities

Platform9 recorded a score of 8.67 out of 10 in the financial management category. It provided a good range of financial control over a wide range of technologies, from VMs to cloud-native. This financial control includes showback and chargeback, which means it can be deployed to match organizations' levels of financial maturity.

Flexible deployment options provide greater choice of where Platform9 runs

Platform9 supports a wide variety of environments where its solution can be deployed, from on-premises to public clouds, or as a SaaS solution. This enables organizations to select the environment that fits with their current and future objectives. Ovum believes that this degree of flexibility in terms of where a solution can be run fits with the new thinking that as organizations adopt newer forms of computing, they would prefer to move existing familiar tool sets if possible.

Weaknesses

A lack of backup capability requires an additional third-party solution

In line with its lack of private cloud features, Platform9 is weak when it comes to backup and DR capabilities. This means that Platform9 in most typical deployment scenarios must be used in conjunction with a backup and DR solution, something most organizations probably already have.

Red Hat (Ovum recommendation: Challenger)

Figure 15: Red Hat radar diagrams
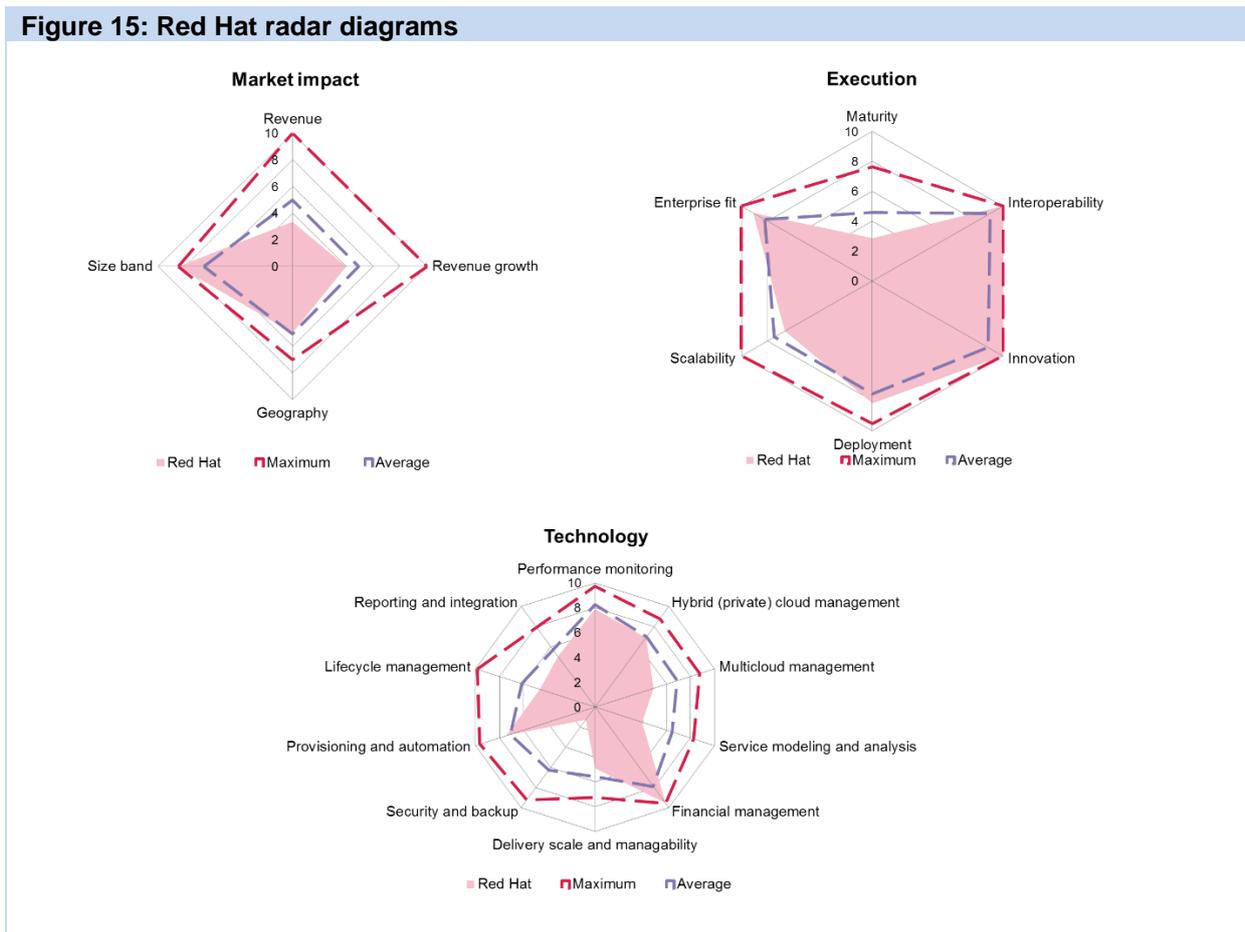
Source: Ovum

Products

Cloudforms

ODM Analysis

Red Hat scored 10 above-average category scores out of the 20 categories evaluated. Three of these were category-leading scores with two a maximum 10 out of 10. Red Hat was strongest in the execution dimension where 66% of its scores were above the average for the dimension. Red Hat was overall above the average for both the execution and market impact dimensions and slightly below average in the technology dimension, where a lack of backup and DR capabilities damaged its overall score.

Strengths

Strong financial-management capability

Cloudforms enables the cost of any cloud service to be seen, and supports the use of chargeback and showback in its solutions. Ovum's research show that lines of business are becoming more influential in purchasing decisions, and more robust financial-management capabilities will be needed to enable CFOs to evaluate the cost and value of any IT spending on cloud computing. In the ODM on

multicloud management Red Hat was second in the financial management category and scored well above average, with 9.53 out of 10, compared to the average of 6.53 and the category leader's 9.57.

Above-average capabilities in performance monitoring

Cloudforms scored above average in the ODM in terms of performance management. Ovum particularly likes the ability of Cloudforms to monitor both VMs and containers, and while its network and storage management capabilities are less developed, Cloudforms does provide a basic monitoring capability.

Strong private cloud and average public cloud management

Cloudforms provides an above-average capability in terms of managing private and hybrid cloud scenarios, but was only average for public cloud environments. This mixed capability is in line with the business adoption of cloud, but Ovum believes the public cloud management capabilities will become more significant in the next couple of years. Red Hat has indicated that the future development of Cloudforms will be focused on public cloud management, which will enable organizations to use a management tool and grow with that to become a majority cloud user.

Weaknesses

Backup is not a core capability

While Cloudforms delivers a good management capability, it lacks an integrated backup and security functionality. Compared to other vendors in the ODM, Red Hat scored below average, with no DR or BC capability or even an integrated third-party solution.

No SaaS offering

Cloudforms is only available as an on-premises software solution that can be installed in public clouds but is not available as a SaaS solution. For many organizations, the ability to purchase a solution as SaaS or on-premises forms part of the selection process. Although they may only want one option, supporting both is seen as providing flexibility in terms of deployment. However, Red Hat does have some cloud service providers (CSPs) offering CloudForms as an off-premises managed service.

VMware (Ovum recommendation: Leader)

Figure 16: VMware radar diagrams
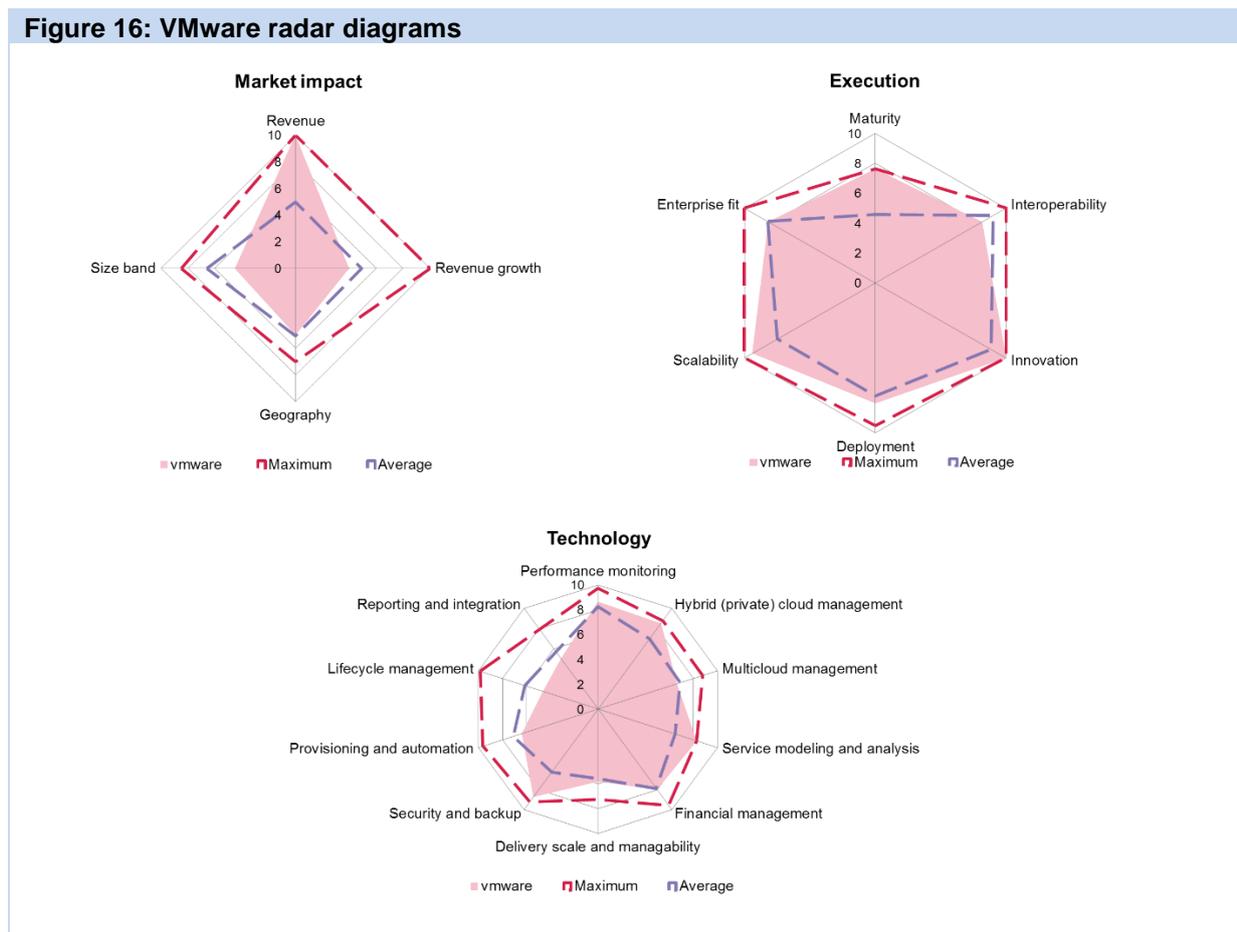
Source: Ovum

Products

Cloud Management Platform

ODM Analysis

VMware recorded 16 above-average scores out of the 20 evaluated, and four of these were category-leading scores with two a maximum 10 out of 10. VMware was also one of four vendors to record overall above-average scores for all three dimensions. VMware's strongest dimension was technology where 90% of its scores were above average. VMware was also the leader when all the dimension's scores were totaled and normalized to a base of 10. VMware scored 7.3, with the second scoring 7.1, third 6.99, and fourth 6.71, with the cohort average at 6.

Strengths

In-depth service modeling and analysis capability

VMware was the category leader in service modeling and analysis, with a score of 8.28 out of 10, compared to the average of 5.90 out of 10. VMware was also strong in the performance-analysis section where it was one of only two vendors able to deliver on every requirement.

Security and backup

VMware provides backup, DR/BC, and fault-tolerant capabilities in its solution, which enables IT administrators to deliver centrally managed service quality and data protection from a company's multicloud environment. In addition to this, VMware also scored 100% on the security sections in this capability, and Ovum particularly liked VMware's ability to provide security at multiple levels in any deployment.

Strong hybrid cloud management capabilities

VMware was very strong in the ODM on MCM in terms of managing the private cloud, scoring 8.54 out of 10 compared to the average of 5.72 out of 10. VMware was one of only a handful of vendors that provided management capabilities for all aspects of the private cloud, from compute to network.

Weaknesses

Lack of advanced cloud service quality management features

While VMware provides the basic quality-management capabilities, it lacks the finesse and refined capabilities of others in the ODM. For example, it cannot monitor the overall service availability of the cloud provider and manage that cloud provider's service accordingly in terms of classification.

Emerging vendors

The ODM compares management capabilities in multicloud and hybrid cloud management. However, the adjacent technology area of monitoring may be more appropriate for some customers that do not want complete management functionality, but want to gain visibility into these environments first.

Although emerging vendors do not have all the management capabilities required for inclusion in the ODM, they are capable of monitoring multicloud and hybrid cloud environments, and Ovum considers these vendors worthy of consideration if monitoring is required compared to full management. Ipswitch is the only vendor in the emerging vendors category.

Ipswitch

The operational environments that IT departments must support are a complex mixture of cloud, SaaS solutions, and on-premises technologies. The challenge facing many CIOs is how to access the data generated from these environments in a way that does not lock them in to a single vendor. Ipswitch has developed its WhatsUp Gold network monitoring product so that it can access and integrate these different data sources, and deeper insights can be obtained. WhatsUp Gold is a comprehensive monitoring solution that covers nine different aspects of operational management and monitoring.

Network monitoring and alerting

Ipswitch is a network monitoring solution that has expanded to become a more comprehensive monitoring solution. However, at its core is a sophisticated network monitoring capability that includes active, performance, and passive techniques. The active monitoring polls out to discover if devices can respond, indicating if the device is available. Just because a device shows up does not mean it is operational. Polling makes sure it can respond and can therefore provide greater confidence that it is operational. Performance monitoring uses the usual protocols, including simple network management protocol (SNMP), secure shell (SSH), and Windows management instrumentation (WMI), to collect performance information about the network devices being monitored. This performance information is

used for proactively addressing network troubleshoots and for predictive analysis. Passive monitors enable WhatsUp Gold to receive unsolicited events and act on them accordingly.

Discovery and mapping

Ipswitch has a very good UI that displays the network and devices in a format that makes drilling down simple and easy. Ovum particularly likes the approach to showing the devices or network links that have problems and need remediation. Ipswitch performs layer 2/3 network discover by individual IP addresses, seed scan, IP address ranges, or subnets.

Dashboards

The value of a monitoring solution is twofold. The first is that IT administrators can ensure the environment is performing and there are no technical issues. The second is to inform management at a glance of the overall status of the environments. Ipswitch performs this particularly well because the dashboard is clear and configurable, so the IT team can see one view, while line-of-business managers see something different.

Network traffic analysis

Ipswitch supports a variety of flow protocols, including NetFlow Secure Event Logging (NSEL), sampled flow (sFlow), jFlow, and Internet Protocol Flow Information Export (IPFIX). These flow records are directed to port 9999 on the WhatsUp Gold server, where a centralized record of network traffic is collected and reported.

Application monitoring

The extension of WhatsUp Gold to cover specific applications demonstrates that these applications are becoming more critical and require careful management. While all web-type applications can be monitored, Ovum likes the rebuilt monitoring for some of the most common applications, such as Microsoft Exchange, SQL, SharePoint, and Active Directory, and even SaaS applications, such as Outlook 365.

Configuration management

The ability to ensure configuration details are compliant is often overlooked when IT administrators think about the features needed in any management tool. Ipswitch provides support for different compliance requirements, such as HIPAA, SOX, FISMA, PCI DSS, and other regulations. Ipswitch will alert IT administrators when a configuration is changed, and audit reports to identify when configuration setting go out of compliance.

Virtual environment monitoring

The ability to gather detailed information on both the host environment as well as any guest VMs in virtualized deployments is table stakes for a monitoring solution. However, Ipswitch provides this for both Microsoft Hyper-V and VMware ESXi environments.

Disaster recovery

Ipswitch provides an automatic failover of the primary monitoring server to a secondary server. This failover capability is important because monitoring provides IT with visibility of the entire environment. Should it fail, the IT operations team would be "blind" and unable to make operational decisions with any degree of confidence.

Cloud monitoring

Ipswitch provides the ability to extend the monitoring beyond the data center to the public cloud environments used by the organization. Ipswitch supports the two leading global public cloud platforms: AWS and Microsoft Azure.

Vendor solution selection

Inclusion criteria

There are many vendors in the IT management market offering solutions to customers of all sizes. However, the criteria for inclusion in this ODM are based on the ability to offer solutions specifically for the multicloud and hybrid cloud management aspects of data center management. All the vendors have verified the accuracy of the data. As is typical with these projects, some vendors are unable to meet the strict deadlines for the return of submissions so decline to participate.

The criteria for inclusion of a vendor in the ODM for multicloud and hybrid cloud management, 2018–19 are as follows:

- The vendor must be a global vendor with customers in all of three regions: Asia-Pacific, EMEA, and North America.

- A solutions vendor must offer cloud management capabilities that enable the management of platforms/infrastructure other than its own technology.

- A software vendor's solution must be capable of managing more than just server virtualization. It must cover at least three of the four main areas (server, storage, network, and client/desktop).

- The vendor must have at least 500 customers, and they must be a mix of midsize enterprises (1,000–4,999 employees) and large enterprises (5,000+ employees).

Exclusion criteria

The multicloud and hybrid cloud management market is considered a new and evolving management market, Ovum accepts that some vendors have entered this market from different backgrounds, such as infrastructure management, services management, or cloud. Vendors and products excluded from the analysis are determined according to the following criteria:

- The vendor's solution is only applicable to five of 10 different classifications in the technical dimension (performance monitoring, hybrid (private) cloud management (server, network, storage, I/O), multicloud management, service modelling and analysis, financial management, delivery scale and manageability, security and backup, provisioning and automation, lifecycle management, and reporting and integration).

- More than 50% of the vendor's solution is made up from partner solutions or third-party solutions.

- The vendor has no direct contact with the end customer; everything is done through channel partners.

Methodology

Technology assessment

In this assessment dimension Ovum developed a series of features and functionality that would reveal differentiation between the leading solutions in the marketplace. The criteria for virtualization and hybrid cloud management are as follows:

- **Performance monitoring:** This looks at a solution's ability to monitor resource usage and its impact on performance. In the 2018–19 report, monitoring is extended to mobile and containers technologies.

- **Hybrid (private) cloud management (server, network, storage, I/O):** The ability to manage all aspects of the infrastructure delivery chain from server, network, storage, endpoint, to I/O.

- **Multicloud management (public cloud and private):** How well the solutions integrate with other cloud solutions, and not only allow visibility into resource usage, but control and management of those environments.

- **Service modeling and analysis:** One of the biggest challenges for any CIO is being able to predict future resource needs by type and delivery method. This section looks at how well the solutions allow for modeling and support "what-if" analysis.

- **Financial management:** An increasingly important, if underrepresented, capability is that of managing the cost and financial aspects of delivering services to line-of-business customers. In this section the capabilities of how the solutions surface costs and associate them to services are evaluated.

- **Delivery scale and manageability:** The ability to manage at scale across different geographies and technologies.

- **Security and backup:** The ability to secure and protect data should be implicit in any solution. Although these solutions are primarily seen as backup and recovery solutions, they must be able to perform basic data protection and support security integrations.

- **Provisioning and automation:** The need to automate as many operational activities as possible aligns with the CIO's need to reduce costs. This section looks at how the solutions enable different levels of automation.

- **Lifecycle management:** The rise of DevOps has changed how the IT operations function thinks about the management of applications. This section focuses on how well the solutions support the concept of lifecycle management and align with any DevOps approach.

- **Reporting and integration:** The final capability is the need to produce more than the standard weekly resource usage report. This section evaluates the solutions' ease of integration with other data sources and how user-friendly their reporting capabilities are.

Execution

In this dimension, Ovum reviewed 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:** This element assesses 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.
- **Deployment:** Referring to a combination of assessed criteria and points of information, Ovum provides detail on various deployment issues, including time, industries, services, and support.
- **Scalability:** Points of information are provided to show the scalability of the solution across different scenarios.
- **Enterprise fit:** 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 in this dimension. Market impact is measured across four categories, each of which has a maximum score of 10.

- **Revenue:** Each solution's global virtualization and hybrid cloud management revenues are calculated as a percentage of the market leader's. 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.
- **Geographical penetration:** Ovum determines each solution's revenues in three regions: the Americas; Europe, the Middle East and Africa (EMEA), and Asia-Pacific. These revenues are calculated as a percentage of the market-leading solution's revenues in each region, multiplied by 10, and then rounded to the nearest integer. The solution's overall geographical reach score is the average of these three values.
- **Size-band coverage:** Ovum determines each solution's revenues in three company size bands: large enterprises (more than 5,000 employees), medium-sized enterprises (1,000–4,999 employees), and small enterprises (fewer than 1,000 employees). These revenues are calculated as a percentage of the revenues of the market leader in each region, multiplied by 10, and then rounded to the nearest integer. The vendor's overall company size-band score is the average of these three values.

Ovum ratings

- **Market leader:** This category represents the leading solutions Ovum believes 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 vendors in this category have a 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-one offering, they should be explored as part of the technology selection.

Ovum Decision Matrix interactive

The Interactive Decision Matrix for virtualization and hybrid cloud management, an online interactive tool that provides the technology features that Ovum believes are crucial differentiators for leading solutions in this area – will soon be available to download from the Ovum Knowledge Center.

Appendix

Methodology

- Vendors complete an in-depth questionnaire and comprehensive capability matrix that is analyzed and evaluated.
- There is a series of comprehensive, structured meetings, including a demonstration where appropriate.
- Supplemental information is obtained from vendor literature and websites, and from the results of Ovum surveys, some of which were specifically designed for this report.
- The article is peer reviewed and is authored by at least two analysts.

Further reading

Analyst Insight: The Challenges and Benefits of Management in an as-a-Service World, INT003-000061 (March 2018)

ICT Enterprise Insights 2017/18 – Global: ICT Spend and Sourcing, PT0099-000001 (September 2017)

ICT Enterprise Insights 2017/18 – Global: IoT, Cloud, and AI, PT0099-000003 (September 2017)

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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.

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