

Ovum Decision Matrix: Selecting a Cloud Platform for Hybrid Integration Vendor, 2019–20

Market dynamics and competitive positioning of key vendors

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Summary

Catalyst

Digital business is driving a proliferation of applications, services, data stores, and APIs that need to be connected to deliver critical business processes. Integration is the lifeblood of today's digital economy, and middleware is the software layer connecting different applications, services, devices, data sources, and business entities. This Ovum Decision Matrix (ODM) is a comprehensive evaluation to help enterprise IT leaders, including chief information officers (CIOs), enterprise/integration architects, integration competency center (ICC)/integration center of excellence (CoE) directors, and digital transformation leaders select a cloud platform provider best suited to their specific hybrid integration requirements.

Ovum view

Ovum's *ICT Enterprise Insights 2018/19* survey results indicate a strong inclination on the part of IT leaders to invest in integration infrastructure modernization, including the adoption of new integration platforms. IT continues to struggle to meet new application and data integration requirements driven by digitalization and changing customer expectations. Line-of-business (LOB) leaders are no longer willing to wait for months for the delivery of integration capabilities that are mission-critical for specific business initiatives. Furthermore, integration competency centers (ICCs) or integration centers of excellence are being pushed hard to look for alternatives that significantly reduce time to value without prolonged procurement cycles.

Against a background of changing digital business requirements, IT leaders need to focus on revamping enterprise integration strategy, which invariably will involve the adoption of cloud platforms for hybrid integration, offering deployment and operational flexibility and greater agility at a lower cost of ownership to meet multifaceted hybrid integration requirements. With this report, Ovum is changing its nomenclature for defining middleware-as-a-service (MWaaS) suites for hybrid integration and, in future, we will be using the term "cloud platforms (or PaaS products) for hybrid integration" to refer to this market.

We follow the specification of National Institute of Standards and Technology (NIST) for PaaS, according to which PaaS as a cloud service model should meet a range of characteristics, including:

- on-demand self-service
- broad network access
- resource pooling
- rapid elasticity
- measured service.

Merely delivering application and/or data integration capabilities via the cloud on a subscription basis does not amount to a PaaS provision for hybrid integration. Some cloud platforms or software components of a cloud platform included in this ODM might not be termed as PaaS according to NIST's specification, which is why we use the term "cloud platform".

User productivity tools and deployment flexibility are key characteristics of cloud platforms for hybrid integration that help enterprises respond more quickly to evolving digital business requirements. With

DevOps practices, microservices, and containerized applications gaining popularity, IT leaders should evaluate the option of deploying middleware (integration platforms) on software containers as a means to drive operational agility and deployment flexibility.

Key findings

- Integration is still predominantly done by IT practitioners, but IT leaders should consider "ease of use" for both integration practitioners and less-skilled, non-technical users, such as power users, when selecting integration platforms for a range of hybrid integration use cases.
- The latest Ovum forecast reveals that integration PaaS (iPaaS) and API platform market segments are expected to grow at a compound annual growth rate (CAGR) of 59.7% and 61.7% respectively between 2018 and 2023, clearly the fastest growing middleware/PaaS market segments.
- The global iPaaS market is showing signs of saturation (not in terms of growth), and vendor offerings do not differ much in terms of technical capabilities. Key areas for iPaaS product development include support for deployment on containers, improvement in user experience (UX) for less-skilled, non-technical users, and machine learning (ML)-led automation of different stages of integration projects ranging from design and development to deployment and maintenance.
- PaaS for hybrid integration will significantly cannibalize the established on-premises middleware market, and by the end of 2019, Ovum expects at least 50% of the new spend (not including upgrades of on-premises middleware or renewal of similar licenses) on middleware to be accounted for by PaaS or cloud-based integration services.
- Major middleware and leading iPaaS vendors dominate this market, even though their routes to the development of a cloud platform for hybrid integration can be quite different.
- PaaS adoption in enterprises is for both strategic and tactical hybrid integration initiatives. IT leaders realize the significant benefits that cloud platforms for hybrid integration bring to the table in terms of greater agility in responding to business requirements and cost savings.
- iPaaS vendors have invested significantly in developing lightweight PaaS-style products for B2B/electronic data interchange (EDI) integration to support key EDI messaging standards, rapid trading partner onboarding and community management, and governance of B2B processes.

Vendor solution selection

Inclusion criteria

Ovum has closely tracked the emerging cloud platforms for hybrid integration vendor landscape over the last four years and we have used these observations as the baseline for inclusion/exclusion in this ODM. The criteria for inclusion of a vendor in this ODM are as follows:

- The cloud platform(s) should deliver significant capabilities across two of the three technology assessment criteria groups: "cloud integration"; "API platform"; and "B2B and mobile application/backend integration".

- There is substantial evidence that the vendor is interested in pursuing a progressive product strategy that helps ascertain product viability and applicability to a range of hybrid integration use cases.
- Middleware products are not “cloud washed” and individual components demonstrate essential cloud services characteristics, such as multitenancy, resource sharing, and rapid scalability, as well as allowing usage tracking and metering and supporting the enforcement of service-level agreements (SLAs).
- The cloud platform(s) should have been generally available as of March 30, 2019. The vendor must have at least 50 enterprise (paid) customers using various components as of May 31, 2019. We did not want to leave out any vendor because of limitations related to significant revenue realization.
- It should deliver enterprise-grade developer enablement and API-led integration capabilities, and an appropriate UX for less-skilled users (non-developers).
- At least the core middleware product should be architecturally coherent and product/component APIs should be available to support internal integration between different components of the middleware stack.

Exclusion criteria

A vendor is not included in this ODM if:

- The core middleware component provided by the vendor is restricted to API management, and the rest of the capabilities are delivered in partnership with other vendors. For this reason, specialized API management vendors that do not offer any substantial capabilities for other hybrid integration use cases were excluded from this ODM. This means that cloud-based application and data integration capabilities are critical for inclusion in this ODM.
- The vendor is unable to commit required time and resources for the development of research to be included in this ODM. Some vendors, which otherwise would qualify for inclusion in this ODM, opted out of the evaluation exercise and were unable to submit the required level of information in response to the evaluation criteria spreadsheet by the cutoff date. (Jitterbit is the only vendor that qualified for inclusion but opted not to participate without citing any specific reason, and we decided to exclude it from this ODM).
- There is not enough evidence that the vendor is interested in expanding the features and capabilities to cater for the requirements of emerging use cases and exploiting new market trends.
- There are indications that the vendor is struggling to grow its business and has partnered with middleware vendors to defend its position in the market, or the customer base is confined to only specific regions.
- The vendor did not feature in any of the analyst enquiries from enterprise IT leaders and users, and there were other indicators for a lack of investment and a dedicated strategy for middleware products.

Ovum ratings

Market leader

This category represents a leading vendor that Ovum believes is worthy of a place on most technology selection shortlists. The vendor has established a commanding market position with its cloud platform for hybrid integration, demonstrating relatively high maturity, cohesiveness, good innovation and enterprise fit, and the capability to meet the requirements of a wider range of hybrid integration use cases, as well as executing an aggressive product roadmap and commercial strategy to drive enterprise adoption and business growth. In terms of scores, to be a leader in this ODM, a vendor must score 8 out of 10 both on “technology” and “execution and market impact” assessment dimensions.

Market challenger

A cloud platform for hybrid integration vendor in this category has a good market position and offers competitive functionality and a good price/performance proposition and should be considered as part of the technology selection. The vendor has established a significant customer base, with its platform demonstrating substantial maturity, catering for the requirements of a range of hybrid integration use cases, as well as continuing to execute a progressive product and commercial strategy. Some vendors included in this category are “strong performers” in terms of technology assessment but did not achieve consistently high or good scores for the “execution and market impact” dimension, which is an essential requirement for achieving a “market leader” rating.

Market follower

A cloud platform for hybrid integration in this category is typically aimed at specific hybrid integration use cases and/or customer segment(s) and can be explored as part of the technology selection. It can deliver the requisite features and capabilities at reasonable charge for specific use cases or requirements. This ODM does not feature any vendor in this category.

Market and solution analysis

A major market shift has begun and will not slow down

Hybrid integration platform

Ovum defines a hybrid integration platform as a cohesive set of integration software (middleware) products that enable users to develop, secure, and govern integration flows connecting diverse applications, systems, services, and data stores as well as enabling rapid API creation/composition and lifecycle management to meet the requirements of a range of hybrid integration use cases. A hybrid integration platform is “deployment-model-agnostic” in terms of delivering requisite integration capabilities, be it on-premises and cloud deployments or containerized middleware.

The key characteristics of a hybrid integration platform include:

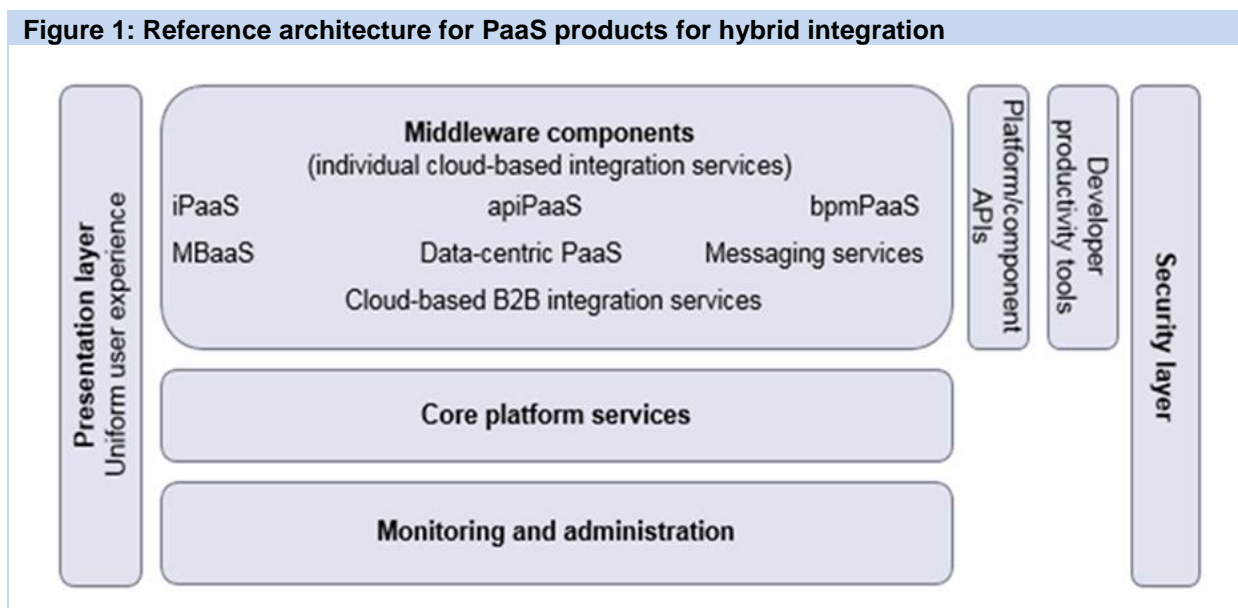
- support for a range of application, service, and data integration use cases, with an API-led, agile approach to integration reducing development effort and costs
- uniformity in UX across different integration products/use cases and for a specific user persona

- uniformity in underlying infrastructure resources and enabling technologies
- flexible integration at a product/component API level
- self-service capabilities for enabling less-skilled/non-technical users
- the flexibility to rapidly provision various combinations of cloud-based integration services based on specific requirements
- openness to federation with external, traditional on-premises middleware platforms
- support for embedding integration capabilities (via APIs) into a range of applications/solutions
- developer productivity tools, such as a "drag-and-drop" approach to integration-flow development and prebuilt connectors and templates, and their extension to a broader set of integration capabilities
- flexible deployment options such as on-premises deployment, public/private/hybrid cloud deployment, and containerization
- centralization of administration and governance capabilities.

For the purpose of this ODM, we are concerned only with cloud platforms (or PaaS products) for hybrid integration. A comprehensive PaaS suite (see Figure 1) combines iPaaS, apiPaaS, mobile-back-end-as-a-service (MBaaS), and other cloud-based integration services such as data-centric PaaS and cloud-based B2B integration services to offer the wide-ranging hybrid integration capabilities required to support digital business.

These individual cloud-based integration services are offered on a subscription basis, with each component having essential cloud characteristics, such as multitenancy, resource sharing, and rapid scalability. The success of iPaaS as an agile approach to hybrid integration has played a key role in the evolution of this market. For enterprises, PaaS products for hybrid integration represent a good opportunity to shift from legacy middleware platforms that require significant upgrades and investment to remain relevant in the current operating environment. Table 1 provides iPaaS and API platforms software market forecast for the period 2018-23.

Figure 1: Reference architecture for PaaS products for hybrid integration



Source: Ovum

Table 1: iPaaS and API platforms global spend (\$m), 2018–23

Product	2018	2019	2020	2021	2022	2023	CAGR (2018–23)
API platforms	1,236	2,011	3,274	5,300	8,581	13,678	61.7%
iPaaS	979	1,576	2,569	4,115	6,523	10,176	59.7%

Source: Ovum

Deployment of middleware on software containers is in the early stages and event-driven integration is gaining ground

Cloud-native integration is a natural fit to hybrid IT environments

It is obvious that hybrid IT environments call for a cloud-native integration paradigm that readily supports DevOps practices and drives operational agility by reducing the burden associated with cluster management, scaling, and availability. In the same way as a cloud-native integration paradigm, integration runtimes run on software containers, are continuous integration and continuous delivery and deployment (CI/CD)-ready, and are significantly lightweight and responsive enough to start and stop within a few seconds. Many enterprises have made substantial progress in containerizing applications to benefit from a microservices architecture and portability across public, private, and hybrid cloud environments. Containerized applications and containerized middleware represent a good combination. In cases where an application and a runtime are packaged and deployed together, developers can benefit from container portability and the ease of use offered by the application and middleware combination.

In other terms, it makes sense for applications and middleware to share a common architecture, because DevOps teams can then avoid the overhead and complexity associated with the proposition of running containerized applications on different hardware and following different processes than those that exist with traditional middleware. This is true even in cases that do not involve much re-architecting of the applications, and DevOps teams can still develop and deploy faster using fewer resources.

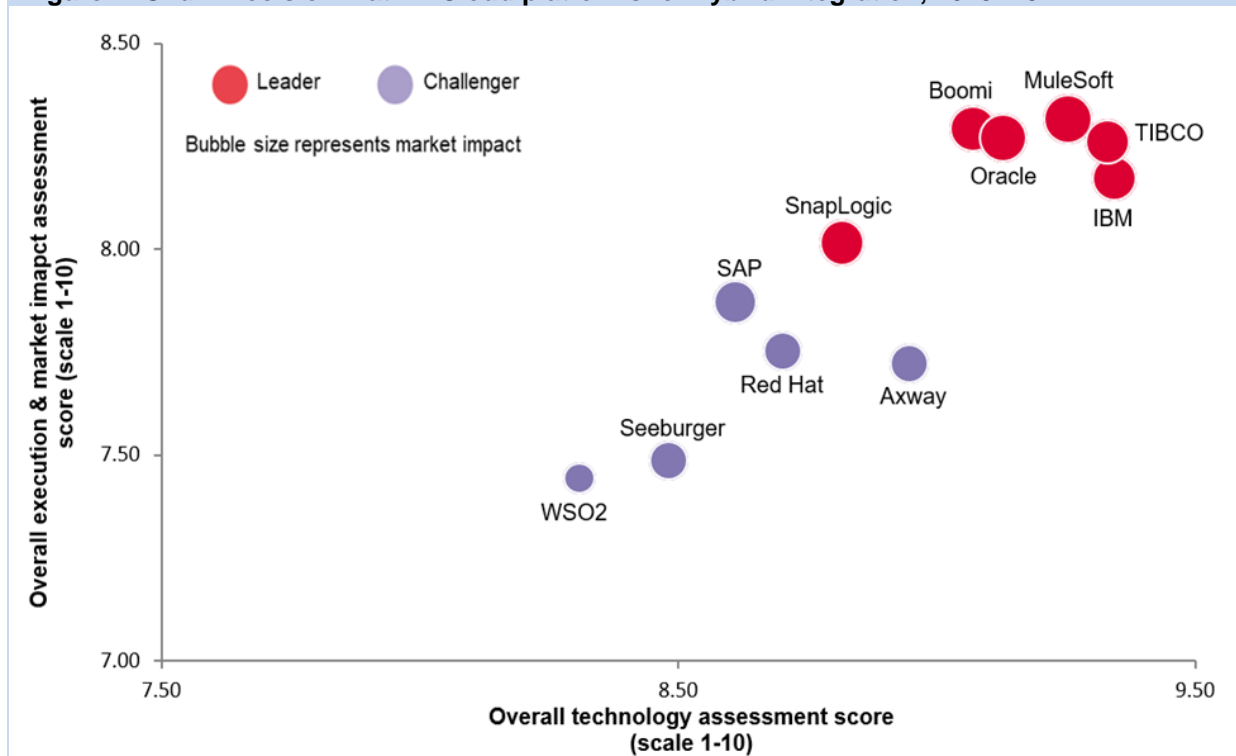
A lot of data is generated in the form of streams of events, with publishers creating events and subscribers consuming these events in different ways via different means. Event-driven applications can deliver better customer experiences. For example, this could be in the form of adding context to ML models to obtain real-time recommendations that evolve continually to meet the requirements of a specific use case. Embedding real-time intelligence into applications and real-time reactions or responsiveness to events are key capabilities in this regard.

For distributed applications using microservices, developers can opt for asynchronous event-driven integration in addition to the use of synchronous integration and APIs. Apache Kafka, an open source stream-processing platform, is a good option for such use cases requiring high throughput and scalability. Kubernetes can be used as a scalable platform for hosting Apache Kafka applications. Because Apache Kafka reduces the need for point-to-point integration for data sharing, it can reduce latency to only a few milliseconds, enabling faster delivery of data to users.

Ovum Decision Matrix: Cloud platforms for hybrid integration, 2019–20

The ODM chart in Figure 2 represents the results of a comprehensive evaluation of 11 cloud platforms for hybrid integration vendors meeting the inclusion criteria. The bubble size representing vendor positioning is determined by the scores achieved for the “market impact” criteria group under the “execution and market impact assessment” dimension. Table 2 provides a list of market leaders and challengers in alphabetical order (not in terms of scores), and subsequent sections also follow this practice.

Figure 2: Ovum Decision Matrix: Cloud platforms for hybrid integration, 2019–20



Source: Ovum

Table 2: Ovum Decision Matrix: Cloud platforms for hybrid integration, 2019–20

Market leaders	Market challengers	Market followers
Boomi	Axway	-
IBM	Red Hat	-
MuleSoft	SAP	-
Oracle	Seeburger	-
SnapLogic	WSO2	-
TIBCO	-	-

Source: Ovum

Market leaders

Market leaders: technology

Table 3 shows the vendors with top-four scores (on a scale of 1–10, including those with the same scores) for each criteria group under the technology assessment dimension. The scores are rounded to the first decimal place.

Table 3: Ovum Decision Matrix: Cloud platforms for hybrid integration, 2019–20 market leaders: technology

Criteria group	Vendor	Score
Cloud integration/iPaaS	Boomi	9.6
	MuleSoft, SnapLogic, and TIBCO	9.4
	IBM	9.3
	Oracle	9.2
API platform	IBM and TIBCO	9.5
	MuleSoft	9.4
	Axway and Red Hat	9.2
	WSO2	9.1
B2B and mobile application/backend integration	Axway	9.6
	Oracle and Seeburger	9.2
	IBM	9.0
	Boomi and SnapLogic	8.7

Source: Ovum

Market leaders: execution and market impact

Table 4 shows the vendors with top-four scores (on a scale of 1–10, including those with the same scores) for three key criteria groups under the execution and market impact assessment dimension. The scores are rounded to the first decimal.

Table 4: Ovum Decision Matrix: Cloud platforms for hybrid integration, 2019–20 market leaders: execution and market impact

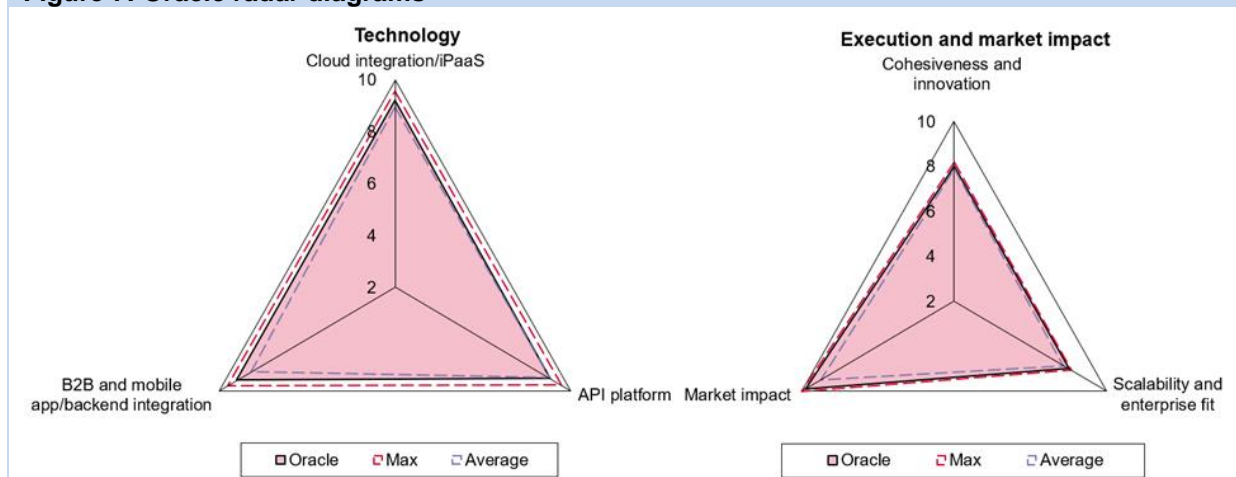
Criteria group	Vendor	Score
Cohesiveness and innovation	MuleSoft	8.2
	Boomi, IBM, Oracle, SAP, SnapLogic, and TIBCO	8.0
	Axway, Red Hat, Seeburger, and WSO2	7.7
Scalability and enterprise fit	Boomi and TIBCO	8.2
	IBM, Oracle 8.0	8.0
	MuleSoft	7.9
	Red Hat	7.7
Market impact	MuleSoft	10
	Oracle	9.8
	Boomi	9.5
	TIBCO and SnapLogic	9.2

Source: Ovum

Vendor analysis

Oracle (Ovum recommendation: Leader)

Figure 7: Oracle radar diagrams



Source: Ovum

Ovum SWOT assessment

Strengths

A well-balanced, comprehensive PaaS for hybrid integration product set

Oracle has a well-rounded PaaS for hybrid integration portfolio and achieved high scores for various criteria groups under the technology assessment dimension. Oracle Integration Cloud, Oracle's iPaaS solution has seen rapid growth in terms of revenue over the last three years and, along with other PaaS offering of the portfolio, such as Oracle API Platform, Oracle SOA Cloud Service, and Oracle Mobile Hub, forms a good option for all key hybrid integration use cases. Oracle Self-Service Integration Cloud service aimed at less skilled, non-technical users allows them to build and consume simple integration recipes without any need to code. Oracle offers a uniform UX across various products of this middleware portfolio, something which many of its competitors have struggled to offer. The Oracle API Platform offers a range of capabilities for API creation and end-to-end lifecycle management, and has evolved into a fairly competitive offering over the last three to four years. Oracle exploits ML capabilities for providing recommendations at various stages of the design, testing, and deployment cycle, including but not limited to data mapping, business object/API recommendations in context, and the best next action to provide the logical next step in the flow. Insight capability for business integration analytics is a differentiator for Oracle.

Rapid sustained revenue growth over the last three to four years

Oracle has seen rapid revenue growth for its PaaS for hybrid integration portfolio. This has translated into several thousands of large enterprise customers using multiple PaaS offerings to tackle hybrid integration challenges. Oracle has also had success in cross-selling and upselling PaaS products to existing customers, as well as adding a significant number of new customers and securing one of the leading market shares. Most of this success in driving adoption and revenue growth can be attributed to aggressive execution against ambitious product roadmaps, and of course, Oracle's financial muscle to invest billions of dollars in new product development and mobilize a large global salesforce is also a key strength.

Weaknesses

Specific gaps in products need to be addressed with a focus on the usability for non-Oracle endpoints and workloads

In terms of its API platform, Oracle should focus on providing support for GraphQL and gRPC standards and SLA compliance, as well as built-in predictive analytics and the ability to send alerts and notifications to subscribers when APIs are versioned in other areas for improvement.

Containerized middleware deployment is an emerging trend and one that many of Oracle's competitors are exploiting for revenue growth. While this is not an officially supported topology from Oracle, containerized middleware deployment is planned for the on-premises execution engine.

When it comes to non-Oracle endpoints and workloads, many enterprise IT leaders are not sure of the usability of Oracle PaaS for integration use cases. They have an understanding that Oracle middleware's usability is limited to Oracle-to-Oracle and Oracle-to-non-Oracle endpoints. This is definitely not the case with Oracle iPaaS, and Ovum has seen various implementations involving non-Oracle to non-Oracle endpoints/applications. Oracle should focus on changing this viewpoint and should deliver more specific messaging for "non-Oracle only" use cases.

Appendix

Methodology

An invitation followed by the ODM evaluation criteria spreadsheet comprising questions across two evaluation dimensions were sent to all vendors meeting the inclusion criteria, with nine vendors opting to participate. Ovum had thorough briefings with the final nine vendors to discuss and validate their responses to the ODM questionnaire and understand their latest product developments, strategies, and roadmaps.

This ODM includes observations and input from Ovum's conversations (including those conducted based on customer references) with IT leaders, enterprise architects, digital transformation initiative leaders, and enterprise developers and integration practitioners using cloud platforms for hybrid integration.

Technology assessment

Ovum identified the features and capabilities that would differentiate the leading cloud platforms for hybrid integration vendors. The criteria groups and associated percentage weightings are as follows.

- Cloud integration/iPaaS (weighting assigned = 40%)
- API platform (weighting assigned = 45%)
- B2B and mobile application/backend integration (weighting assigned = 15%)

Execution and market impact assessment

For this dimension, Ovum assessed the capabilities of a cloud platform for hybrid integration and the associated vendor across the following key areas:

- Cohesiveness and innovation (weighting assigned =40%)
- Scalability and enterprise fit (weighting assigned =45%)
- Market impact (weighting assigned =15%)

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Ovum Consulting

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