Magic Quadrant for Full Life Cycle API Management

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Initiatives: Software Engineering Technologies

> Demand for APIs, fueled by new business models, application development trends and the urgency of modernization, is directing software engineering leaders to the diverse, evolving market for full life cycle API management products. This research assesses 17 vendors to help you make the right choice.

This Magic Quadrant is related to other research:

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Market Definition/Description

Gartner defines the full life cycle application programming interface (API) management market as the market for software that supports all stages of an API's life cycle, namely planning and design, implementation and testing, deployment and operation, and versioning and retirement.

Central to full life cycle API management offerings' capabilities is support in the following functional areas:

- **Developer portals:** A self-service catalog of APIs for enabling, marketing to, and governing ecosystems of developers who produce and consume APIs.

- **API gateways:** Runtime management, security and usage monitoring for APIs.

- **Policy management and analytics**: Security configuration, API mediation and API usage analytics.

- **API design and development**: A meaningful developer experience and tools for designing and building APIs, and for API-enablement of existing systems.

- **API testing:** From basic mock testing to advanced functional, performance and security testing of APIs.

As noted in the following assessments within this Magic Quadrant, some vendors specialize in subsets of the API life cycle, such as runtime API gateways and API testing, while others focus on the entire life cycle.

Magic Quadrant

Figure 1: Magic Quadrant for Full Life Cycle API Management

Source: Gartner (September 2021)

Vendor Strengths and Cautions

Amazon Web Services

Amazon Web Services (AWS) is a Challenger in this Magic Quadrant. It offers Amazon API Gateway, which is frequently used in conjunction with AWS Lambda and the AWS suite of container services. Amazon API Gateway supports both REST APIs and "HTTP APIs," the latter being simpler, less expensive and lower-latency alternatives. AWS continues to invest in improving its developer portal, administration interface and Kubernetes integration.

AWS's operations are geographically distributed. AWS focuses on use cases involving APIs that integrate with other AWS components.

Strengths

- **Marketing strategy:** AWS positions Amazon API Gateway as a simple, high-performance and secure service for APIs built on the AWS cloud. This focus naturally appeals more to existing users of AWS than to those of other cloud platforms.

- **Offering strategy:** Amazon API Gateway is well integrated with many other AWS products. This enables developers to deliver APIs efficiently in front of their AWS-based applications and services.

- **Pricing:** Amazon API Gateway customers pay only for the API traffic they use. This pay-as-you-go approach is cost-effective for organizations with modest amounts of API traffic, but Gartner clients report that costs can quickly mount as usage scales up.

Cautions

- **Product strategy:** Amazon API Gateway is a less suitable choice for organizations with both cloud and on-premises applications, and for organizations with hybrid and multicloud APIs, as it can be deployed only in AWS environments.

- **Industry strategy:** Amazon API Gateway provides only a limited number of prebuilt accelerators to support industry-specific use cases like open banking and Fast Healthcare Interoperability Resources (FHIR).

- **Innovation:** Amazon API Gateway lags behind competing offerings in terms of features and innovation. Its developer portal does not support API ecosystems and marketplaces. It provides only indirect support for some advanced capabilities, such as API monetization.

Axway

Axway is a Leader in this Magic Quadrant. It offers the Amplify API Management Platform, which includes Amplify Catalog, Amplify Marketplace, API Portal, the low-code API Builder, Amplify Analytics, and agents for discovery, subscription and traceability. Axway also provides Amplify Integration Builder, Amplify Streams for event-driven capabilities and the Istio-based Axway Mesh. Axway's offering can be deployed on-premises and in private, public and hybrid clouds. It is also available as SaaS and in an Axway-managed cloud.

Axway's operations are worldwide. Its clients tend to be based in Europe, the Americas, Australia and Asia.

Strengths

- **Market understanding:** Axway aims to deliver a broad product set that can manage and govern APIs across multiple cloud environments and competitors' gateways. To achieve this, Axway has built functionality to integrate with other vendors' API gateways, starting with AWS's Amazon API Gateway and Microsoft's Azure API Management.

- **Product strategy:** Axway offers a diverse portfolio of products that address a wide range of deployment models and use cases, from traditional integration requirements to transformational initiatives. Axway complements its robust API management capabilities with the expertise of its Catalyst strategy team and Catalyst customer engagements to help organizations advance their API strategy.

- **Business model:** Axway uses its OEM and reseller partners to improve its visibility and provide greater choice and flexibility to customers. Its partners include Cloud Elements (owned by UiPath), Ping Identity, SmartBear, Stoplight, API Fortress (owned by Sauce Labs) and — most recently — Cloudentity (for its consent management module).

Cautions

- **Sales execution:** Although Axway secured some big deals and had a healthy average deal size in 2020, Gartner estimates that Axway's API management revenue grew by slightly less than the market average in the same year. However, Axway is transitioning to subscription-based pricing across its portfolio and working to normalize its pricing models to simplify the sales and adoption cycle.

- **Marketing execution:** Axway's bold vision for its product has yet to translate into effective marketing execution. Analysis of the competitive scenarios faced by users of Gartner's client inquiry service indicates that the Amplify API Management Platform is considered by relatively few organizations. Although awareness is growing, many prospective customers still perceive Axway as being primarily a traditional integration vendor.

- **Customer experience:** During Gartner client inquiry sessions, some Axway customers have expressed concerns about the complexity of its UI. Reliance on third-party partner software can result in a more cumbersome user experience, although Axway's partners do provide customers with greater flexibility and best-of-breed technology.

Boomi

Boomi is a Niche Player in this Magic Quadrant. Its API management offering is offered as part of the AtomSphere solution. AtomSphere also includes integration platform as a service (iPaaS), master data management (MDM), workflow, data catalog and low-code development capabilities. It supports hybrid/multicloud and on-premises/private cloud deployments of the Atom runtime with cloud-based administration.

Boomi's operations are geographically distributed. Most of its clients are midsize or large organizations.

On 2 May 2021, Francisco Partners and TPG Capital entered into a definitive agreement to acquire Boomi from Dell Technologies. The acquisition is expected to close by the end of 2021, subject to conditions.

Strengths
- **Operations:** Boomi has mature operational practices and complies with major security standards, such as Service Organization Control 1 and 2 (SOC 1 and SOC 2), Payment Card Industry (PCI), the Health Insurance Portability and Accountability Act (HIPAA), FedRAMP and the General Data Protection Regulation (GDPR). Its SaaS offering runs primarily on AWS infrastructure and is available in multiple regions. It also offers managed services for private deployments on AWS, Microsoft Azure and Google Cloud Platform (GCP).

- **Sales execution:** Boomi's API management revenue grew by well above the market average in 2020. Boomi uses its strong reputation as an enterprise iPaaS provider to expand its API management customer base. Boomi offers short- and long-term trials, and a pay-as-you-go offering for lightweight usage.

- **Geographic strategy:** In 2020, Boomi expanded its sales operations both within the U.S. and beyond. It continued to expand its direct sales presence in North America, Western Europe, Australia, Singapore, Hong Kong, India and Japan. It has a strong, growing network of more than 320 global and regional partners.

Cautions

- Product suitability: Boomi's API management capabilities focus on APIs built or used in the context of its integration platform. This means that Boomi's offering is less suitable for use cases that a general-purpose API management platform supports.

- Product roadmap: Although Boomi recently added support for some much-needed features, such as JSON Web Token (JWT) authentication and IP-based filtering for internal APIs, its product still lacks features commonly found in competing offerings. These include enhanced filtering and chargeback mechanisms for the developer portal, IP address-based filtering for the gateway, and support for cross-origin resource sharing (CORS).

- Postacquisition strategy: As Francisco Partners and TPG Capital move to complete their acquisition of Boomi, prospective customers should stay informed about any associated changes that would affect Boomi's corporate strategy, partnerships and services. Although a downsizing of key product lines appears unlikely, given that Francisco Partners and TPG Capital have previously invested in the growth of companies within their portfolios, prospective customers should check that Boomi's strategy and roadmaps remain aligned with their goals.

Broadcom

Broadcom is a Niche Player in this Magic Quadrant. Its Layer7 API Management platform is focused on the company's API gateway, but also includes API Hub (a developer portal), CA Live API Creator (for creating APIs from databases), CA Mobile API Gateway (and SDK), OAuth Toolkit, CA Rapid App Security, BlazeMeter (for API testing) and AIOps (for operational intelligence and application performance monitoring). BlazeMeter and AIOps are for SaaS deployment. All other offerings are available for SaaS, customer-managed cloud or on-premises deployment.

As a global supplier of semiconductor and infrastructure software products, Broadcom's operations are geographically diversified. The company focuses on its top 2,000 global enterprises and public sector agencies with a portfolio licensing model. A strong team of partners supports smaller organizations.

Strengths

- **Business model:** Broadcom has broad geographic coverage and takes a highly consolidated approach to addressing its top global accounts, to which it sells portfolio license agreements for its products. This solid business model provides customers with unlimited access to its products at a fixed subscription price, which helps drive adoption.

- **Product offering:** Broadcom aims to make security the focus of the Layer7 API Management platform. Following Broadcom's acquisition of Symantec, the Layer7 product organization is tightly aligned with, and intended to be further integrated with, Symantec's offerings for identity management and security.

- **Geographic strategy:** About 40% of Layer7 API Management sales are made outside Broadcom's home region of North America, and the platform continues to expand its presence around the world. All Layer7 components support non-English character sets at both design time and run time.

Cautions

- **Customer experience:** Since Broadcom acquired CA in 2018, CA's API management customers have experienced changes in terms of customer focus and licensing models. Some customers are still dealing with these changes. Feedback from users of Gartner's Peer Insights platform and client inquiry service indicates a desire for improvements to the support Broadcom provides and its relationships with customers.

- **Product strategy:** Layer7 API Management still lacks fundamental features that are common in competing offerings, such as a standard developer experience. Furthermore, many features on Broadcom's product roadmap (such as custom workflows, support for GraphQL and AsyncAPI) are already available in competing products.

- **Innovation:** Reflecting its portfolio-based sales model that targets the largest organizations worldwide, Broadcom's offering focuses on the needs of the company's top global accounts, rather than the more innovative requirements of smaller, more dynamic companies.

Google (Apigee)

Google (Apigee) is a Leader in this Magic Quadrant. Apigee is a feature-rich API management solution that is available for deployment in a public cloud on GCP, in a private cloud or in a data center. Apigee hybrid is a deployment option at the Apigee Enterprise and Enterprise Plus levels. Apigee hybrid enables a customer managed runtime, which may be on Azure, AWS, GCP or a private cloud that uses the Google Anthos platform and an Apigee-managed control plane on GCP. In February 2021, Google launched Apigee X, a GCP-based SaaS deployment that combines Apigee with other GCP products, such as Cloud Armor and reCAPTCHA.

Google also offers two separate API gateways: Google Cloud Endpoints, a low-end API gateway (based on NGINX) for GCP customers; and Google Cloud API Gateway (based on Envoy) for managing API calls to GCP's serverless offerings.

Google's operations are geographically distributed. Its API management clients are mostly in the Americas, Europe, Australia, New Zealand and India.

Strengths

- **Product strategy:** Google's vision for Apigee is differentiated by its focus on helping organizations use APIs to achieve digital ambitions. Gartner clients report that Apigee's strategic services and support for the creation of external-facing API products are particularly strong. Apigee's highly customizable API developer portal options, data monetization capabilities and strong industry focus, especially on the financial services/banking, retail and healthcare sectors, resonate well with its core audience.

- **Pricing:** Google has a simple pricing model for Apigee that accommodates a high volume of APIs and does not limit the number of individual APIs or users.

- **Industry strategy:** Google provides a strong set of industry API accelerators, including an open banking solution called Apigee Open Banking APIx. It provides support for open banking, as required by the Payment Services Directive 2 (PSD2) in Europe and the Consumer Data Right (CDR) in Australia, including a banking-specific developer portal with API documentation.

Cautions

- **Market understanding:** Apigee is primarily designed for API management use cases and does not come with an integration platform.

- **Customer experience:** Apigee is a feature-rich and sophisticated solution, but implementation of Apigee hybrid, in particular, requires significant levels of configuration and customization.

- **Product offering:** To access some of Apigee's features, such as Advanced API Ops (which applies artificial intelligence [AI] and machine learning [ML] technologies to API operations), Apigee Sense (for AI-based API security) and API monitoring, customers need to use Apigee public cloud or Apigee hybrid.

IBM

IBM is a Leader in this Magic Quadrant. It offers IBM API Connect, which enables organizations to manage their APIs across integration, cloud-native microservices and developer ecosystem scenarios. It is available as a SaaS service, and as a customer- or IBM-managed deployment in a hybrid environment. API Connect is also provided as part of the IBM Cloud Pak for Integration, a packaged offering based on Red Hat OpenShift.

IBM acquired Red Hat in 2019, but Red Hat operates and markets its 3scale API Management offering independently. We therefore evaluate Red Hat separately in this Magic Quadrant.

IBM's operations are geographically distributed. Its customers are mostly midsize and large organizations in the banking, retail and public sectors.

Strengths

- **Product capabilities:** IBM API Connect has strong security capabilities, including support for a wide range of security standards, including OAuth 2.0 and OpenID Connect, as well as older standards such as Kerberos, SAML and Web Services Security (WS-Security). API Connect also provides a built-in OAuth authorization server and supports electronic IDentification, Authentication and Trust Services (eIDAS) certificates for open banking, as well as integration with Lightweight Directory Access Protocol (LDAP).

- **Product strategy:** IBM has added support for GraphQL (including security of GraphQL), as well as support for event-driven APIs as a part of its multiform API management strategy. IBM API Connect supports hybrid, multicloud and on-premises deployments, as well as deployments on Kubernetes and Red Hat OpenShift instances.

- **Offering strategy:** The inclusion of IBM API Connect within the IBM Cloud Pak for Integration helps organizations use API Connect with other IBM integration technologies, such as App Connect, MQ, Event Streams and Aspera.

Cautions
- **Sales execution:** Gartner's analysis and estimates indicate that IBM's revenue growth from API management sales in 2020 was below the market average, as it was the year before.

- **Customer experience:** Some IBM API Connect customers have expressed concerns about the complexity of upgrading and patching, depending on the product versions and gateway policies used. Upgrading from API Connect version 5 to the latest version has been a particular concern.

- **Deployment flexibility:** Users of Gartner's client inquiry service have expressed concerns about the deployment flexibility and complexity of IBM API Connect in container-based environments, which IBM is, however, committing additional investment to improve.

Kong

Kong is a Leader in this Magic Quadrant. Kong's API management offering is Kong Konnect, which includes Kong Gateway, a commercial version of its open-source Kong API Gateway based on NGINX with the OpenResty plug-in, the Kong Developer Portal, and the Insomnia tool for API design and testing. Kong also offers Kong Mesh, a service mesh based on its open-source Kuma project, which uses Envoy. Kong Vitals for monitoring and Kong Immunity for anomaly detection are also provided as part of Kong's platform, which is available both on-premises and in the cloud.

Kong's operations are geographically distributed. Kong has clients in many industries, notably the financial, services and technology sectors.

Strengths
- **Market understanding:** Kong takes a developer-focused, "less is more" approach, which makes it attractive to the growing number of customers wary of offerings that they perceive to be complex and "heavy duty." Kong's investments in development and testing, as well as its service mesh and distributed gateway, resonate well with this audience.

- **Product strategy:** Kong offers strong deployment flexibility, which is especially valued by software engineers and API management users. It supports deployments to AWS, Azure, GCP, Docker and Kubernetes, and directly to Linux.

- **Operations:** Kong's API gateway has a small footprint and delivers high performance. In contrast to heavyweight, centralized API management solutions, users can configure and deploy it as either a lightweight API gateway or an enterprise gateway.

Cautions

- **Marketing strategy:** Kong's emphasis on its service mesh and API gateway appeals strongly to developers, but, compared with vendors of more fully featured solutions, Kong has limited appeal to business users aiming to productize APIs or create API marketplaces.

- **Industry strategy:** Kong's accelerators for open banking and FHIR (healthcare) lag behind some of its competitors' offerings. It lacks, for example, specific out-of-the-box support for the U.S. Office of the National Coordinator for Health Information (ONC) regulations, specific services for open banking and support for eIDAS certificates.

- **Pricing:** Kong offers a free version of its open-source "headless" (no UI) gateway and a 30-day free trial of Kong Plus, its full set of enterprise capabilities. But unlike some providers, Kong does not offer licenses based only on the number of API calls; it also charges a fee per service defined, which may be confusing to customers and potentially limit the APIs that they define.

Microsoft

Microsoft is a Leader in this Magic Quadrant. It offers Azure API Management, which is predominantly used within the Microsoft Azure cloud. Its gateway and portal components can also be installed in a hybrid fashion using Azure Arc or directly to Kubernetes.

Azure API Management is part of Microsoft's Azure Integration Services offering and available in five main pricing tiers: Consumption, Developer, Basic, Standard and Premium. Users are charged a fixed hourly fee based on their resource usage and feature set. The Premium tier supports multiregion deployments. Consumption pricing is based on the number of API calls.

Microsoft's operations are geographically diversified. Azure API Management is available in Azure public cloud regions and for use by the U.S. government and Department of Defense.

Strengths

- **Product offering**: Microsoft Azure API Management provides a relatively simple and intuitive administrator interface. Discussions with users of Gartner's client inquiry service and analysis of reviews on Gartner's Peer Insights platform indicate strong product satisfaction scores for Azure API Management.

- **Geographic strategy**: Microsoft demonstrates a strong global strategy for Azure API Management by offering it across all Azure regions and availability zones. The Azure portal is available in 18 languages and provides documentation in more than 50 languages.

- **Business model**: Azure API Management is the default choice for many Microsoft Azure customers. As Azure benefits from the growth in cloud adoption, the user base of Azure API Management will continue to grow.

Cautions

- **Marketing execution**: Microsoft's marketing and go-to-market activities for Azure API Management are delivered primarily in the context of other Azure Services. Prospective API management customers might overlook Azure API Management because of its limited visibility.

- **Sales strategy**: Azure API Management is adopted almost exclusively in conjunction with other Azure services. It is rarely sold as a stand-alone product.

- **Customer experience**: Gartner client inquiries and Peer Insights reviews indicate that some clients find Azure API Management relatively expensive for the level of functionality provided, due to the provisioning commitments required for some tiers.

MuleSoft

MuleSoft is a Leader in this Magic Quadrant. MuleSoft, which is owned by Salesforce but operates as an independent unit, offers the Anypoint Platform, which combines API management and integration capabilities. MuleSoft provides an API-management-only package. It also offers Anypoint API Community Manager, which enables creation of an ecosystem of API consumers and drives adoption of API products, and Anypoint Exchange, a central hub for sharing APIs and integration-related assets within an organization.

MuleSoft's operations are geographically distributed, primarily in North America, Europe, Australia and New Zealand. Its customers are mostly midsize and large organizations.

Strengths

- **Product strategy:** MuleSoft's Anypoint Platform provides a broad set of capabilities for both full life cycle API management and integration. This unified platform strategy, combined with MuleSoft's global network of strategic partners, resonates strongly with a core segment of organizations that require both integration and API management.

- **Marketing execution:** MuleSoft demonstrates thought leadership in API strategy through its white papers, blogs and events. Its global API strategy team of API industry champions and solution consulting experts advise customers on the adoption of MuleSoft technology for API programs.

- **Planning and design:** MuleSoft and its implementation partners work closely with customers to set up what MuleSoft calls Center for Enablement teams. These teams help customers implement and use MuleSoft's platform and API use cases.

Cautions

- **Pricing:** MuleSoft customers often express concerns about the high cost of using its platform; this is especially the case with organizations with simpler use cases that do not require integration. Concerns include core-based pricing, potential price increases at renewal and suitability for on-demand workloads. MuleSoft's strategy is to release pricing models that provide more flexibility and choice in order to address these concerns, but they are not yet available.

- **API monetization:** MuleSoft offers limited capabilities for creating subscription plans and supporting sophisticated API monetization strategies. Organizations with commercial APIs may find MuleSoft's monetization features limited to providing connectivity to billing providers.

- **Customer experience:** MuleSoft customers who use Gartner's client inquiry service and Peer Insights platform have expressed desire for improvements to its approach to contract negotiation, its flexibility, its support responsiveness and the availability of skills. This desire has been especially common among customers outside MuleSoft's core markets of North America, Western Europe, Singapore and Australia.

Postman

Postman is a Visionary in this Magic Quadrant. A new entrant to the Magic Quadrant, Postman is well known as an API testing vendor and as the creator of Postman Collections, which are a way to organize APIs for development and testing. In addition, Postman now offers the Postman API Platform, a SaaS platform that focuses on API design, API testing and creation of API developer portals. In late 2020, Postman hired the maintainers of AsyncAPI, which shows the importance of asynchronous APIs to Postman.

Unlike many vendors in this Magic Quadrant, Postman does not offer an API gateway, but instead partners with API gateway providers.

Postman's operations are mostly in the U.S., the U.K., India and Germany. It has clients in all industries and geographies.

Strengths

- **Market understanding:** Postman's API platform has particularly strong support for developers, including for API design and testing. This demonstrates Postman's strong understanding of developers' requirements for internal and external API portals, API testing and API design.

- **Sales execution and pricing**: Postman's platform is only available as SaaS, in four tiers, including a free tier for developers. There is no metering, and pay-as-you-go options exist for extra services, such as API mocking. Reviewers on Gartner's Peer Insights platform have expressed a high level of satisfaction with Postman's pricing.

- **Innovation:** The uniqueness of the collections and workspaces features of the Postman API Platform provide users with an internal and external collaborative development environment.

Cautions

- **Product offering:** Postman views API gateways as commodity components that most organizations already have. The Postman API Platform can suit users of multiple cloud providers' API gateways, but it is not designed to support clients that primarily need a single API gateway.

- **Customer experience:** Postman is well known for its strong API testing capabilities, but its API management features are less robust. Postman does not provide many critical capabilities primarily associated with runtime and operational management of APIs.

- **Marketing execution:** Awareness of Postman's brand is strong among developers, but Postman lacks visibility to executive audiences. Its thought leadership for API strategy resonates with developers, but has limited reach to business users.

Red Hat

Red Hat is a Niche Player in this Magic Quadrant. It offers Red Hat 3scale API Management as one of its Red Hat Integration solutions. Red Hat 3scale API Management is typically deployed within a hybrid architecture, along with on-premises low-footprint API gateways based on NGINX, and cloud administration. It can also run on-premises on Red Hat's OpenShift container management platform.

Red Hat also offers a fully managed Red Hat OpenShift API Management offering that is based on 3scale API Management.

Red Hat's operations are geographically distributed. Red Hat has clients worldwide.

IBM owns Red Hat, but Red Hat operates and markets 3scale API Management independently. Red Hat is therefore evaluated separately from IBM in this Magic Quadrant. Red Hat did not respond to our requests for information. Our analysis is based on other credible and accepted public sources.

Strengths
- **Sales strategy:** Red Hat has a strong presence in the application infrastructure market. Its 3scale API Management product is a key part of the Red Hat Integration set of products, which includes Red Hat Fuse (a code-based integration platform) and AMQ (a messaging platform).

- **Product strategy:** Red Hat 3scale API Management is integrated with the OpenShift container platform to support multicloud and hybrid cloud solutions.

- **Geographic strategy:** Red Hat has a global presence. Red Hat 3scale API Management supports multiple languages, including Japanese.

Cautions
- **Product strategy:** Red Hat was once a Leader in this market, but is now a Niche Player. Its product capabilities have improved little during the past three years, relative to the competition.

- **Marketing execution:** Red Hat's marketing for 3scale API Management is mainly targeted at developers. Its reach and appeal to business users is limited.

- **Overall viability:** IBM has an overlapping API management offering, IBM API Connect, which provides more advanced capabilities. Red Hat and IBM currently operate as separate companies with distinct product roadmaps, and there are no indications that this will change.

SAP

SAP is a Niche Player in this Magic Quadrant. It offers SAP API Management as a capability of the SAP Integration Suite, which is part of the SAP Business Technology Platform (BTP). BTP is a broad PaaS that also has integration, portal, mobile app development and data management capabilities. SAP uses an OEM version of Google's Apigee Edge API gateway as the runtime component within its cloud-only offering. SAP has built its own full life cycle API management capabilities around this gateway, including analytics and an API developer portal (called API Business Hub Enterprise). SAP API Management is available to all customers, regardless of whether they have a prior relationship with SAP; however, its customers are predominantly existing SAP clients.

SAP's operations are geographically distributed. SAP has customers in all industries.

Strengths

- **Product offering:** SAP provides a capable API management solution, which is available on multiple cloud providers, in combination with SAP's larger product offerings in its BTP. SAP's product provides good security, versioning and retirement, and monetization features.

- **Customer experience:** SAP offers a diverse set of policy templates for download from the SAP API Business Hub, a central catalog of APIs from SAP and its partners. It complements these templates with API consultancy to help users quickly set up and scale their API programs.

- **Operations:** SAP markets its API management offering worldwide as part of the SAP BTP. It provides many integrations with the wider SAP ecosystem, analytics, billing services, identity services and SAP Integration Suite (an iPaaS).

Cautions

- **Sales strategy:** SAP aims to sell its API management solution to existing SAP customers as part of its larger digital transformation platform. Since SAP API Management is sold as part of the SAP Integration Suite, Gartner rarely sees customers invest in SAP API Management without having larger investments in SAP's application and platform capabilities.

- **Offering strategy:** For some components of its API management offering, SAP relies on other vendors: Google (Apigee) for the API gateway, Cloud Elements (which has been acquired by UiPath) for integration adapters, Solace for messaging and events, and Hasura for GraphQL support. Prospective customers should ensure they are comfortable with the levels of influence and control that SAP can provide over those aspects of its platform.

- **Innovation:** SAP has recently delivered a number of solution improvements and has others in development — for example, to support API products, offer a low-footprint gateway (as part of its API mesh) and create APIs from data resources — but many of its competitors already provide such features.

SmartBear

SmartBear is a Niche Player in this Magic Quadrant. It offers SmartBear SwaggerHub, SmartBear ReadyAPI (for testing, security, performance testing and virtualization) and SmartBear AlertSite (for API monitoring). These commercial products incorporate the open-source Swagger Editor (for API design) and SoapUI tool (for API testing), based on the open-source communities Swagger.io and SOAPUI.org, which SmartBear sponsors.

SmartBear focuses on the API development life cycle. Although it does not offer an API gateway, its product set integrates with a wide range of API gateways, including AWS API Gateway, IBM API Connect, Microsoft Azure API Gateway and Google Apigee. SmartBear's API management products are offered on-premises and as SaaS, but most customers use the SaaS option.

SmartBear's products are offered worldwide. SmartBear has offices in the U.S., Europe, Australia and India.

Strengths

- **Product strategy:** SmartBear SwaggerHub provides a strong set of collaboration features to enable development teams to use, and integrate with, repositories (including Git, GitHub, GitLab and Bitbucket), build tools (such as Jenkins) and DevOps tools (Azure DevOps Services) for parallel workstreams for API developers and testers.

- **Product offering:** SmartBear has significant mind share among developers, aided by the open-source SoapUI and Swagger Editor tools, which both have tens of thousands of downloads monthly. SmartBear aims to capitalize on this mind share when shaping its commercial products.

- **Marketing strategy:** SmartBear donated the Swagger specification to the Linux Foundation in 2015 to help form the OpenAPI Initiative. As a result, SmartBear has established itself as a thought leader on API specifications, one with a strong connection to the market.

Cautions

- **Business model:** SmartBear does not offer an API gateway, as its strategy is to integrate with API gateways from other vendors. SmartBear's product set is not designed for organizations seeking a single-vendor API management solution that includes an API gateway.

- **Market understanding:** SmartBear provides a strong technical foundation for API design, enabling an "API design first" strategy, but lacks features for creating API products and supporting API product managers, such as grouping of APIs by business capabilities and API monetization.

- **Vertical strategy:** SmartBear provides horizontal technology that can be used by any industry. However, it does not provide prepackaged accelerators for any particular industry. Instead, customers can use its products, such as SwaggerHub, to define industry-specific APIs including data definitions, taxonomy and semantics.

Software AG

Software AG is a Leader in this Magic Quadrant. It offers the webMethods API management platform (for on-premises deployment) and the webMethods.io API (for the cloud). This vendor focuses on enabling API-based integrations and managing ecosystems around API products. Available as a stand-alone offering, Software AG's API management platform is often used in conjunction with its enterprise iPaaS, webMethods.io API, and/or its Cumulocity IoT platform.

Software AG's operations are geographically distributed. Its customers are mostly large enterprises in the banking, retail, manufacturing and government sectors.

Strengths

- **Market understanding:** Software AG's API management offering addresses the diverse priorities of users, including integration, API-product-led digital business, B2B ecosystems and microservices-based application modernization.

- **Product offering:** Software AG's API management platform is functionally rich, with support for importing and creating OpenAPI Specification (OAS) 2.0/3.0 APIs (in addition to others such as RESTful API Modeling Language [RAML], Web Services Description Language [WSDL] and Open Data Protocol [OData]). It also supports WebSockets. Its webMethods AppMesh platform and microgateway enable support for introspecting and securing Istio and Kubernetes-based microservices, which is important for customers building APIs using a modern microservices approach.

- **Developer portal customization:** Software AG provides users with the ability to customize the developer portal with point-and-click configuration, HTML coding, Cascading Style Sheets (CSS) and JavaScript (which requires programming skills) to help customers create differentiated developer experiences. Its portal has capabilities for creating and managing API communities and includes prebuilt dashboards for API producers and API consumers.

Cautions

- **Marketing execution:** Software AG has invested heavily in rebranding itself as an API-first solution vendor, but Gartner sees fewer clients evaluating it in competitive bids for stand-alone API management, compared with other Leaders.

- **API design and implementation:** Software AG has limited support for designing GraphQL or AsyncAPI. Its support for defining and validating organizational design policies is spread across different products. These provide good capabilities to automatically create APIs in front of existing databases or applications.

- **Industry strategy:** Unlike many vendors, Software AG does not provide accelerators to support open-banking, FHIR or open-government initiatives. It primarily relies on its partner network to provide these accelerators.

TIBCO Software

TIBCO Software is a Niche Player in this Magic Quadrant. TIBCO's API management offering is TIBCO Cloud Mashery, an integrated solution within the TIBCO portfolio that is available as a fully on-premises, hybrid or cloud service offering. TIBCO Cloud Mashery includes capabilities for API modeling and API mocking, a developer portal, a control center, analytics, a microgateway and API proxy apps (Node.js and Flogo). TIBCO's broad portfolio includes products for API-led integration, event-driven applications, MDM, an in-memory data platform and analytics.

TIBCO's operations are geographically distributed. Its customers are mainly midsize and large organizations, which are located all around the world.

Strengths

- **Geographic strategy:** TIBCO has a strong global presence, with sales offices in more than 30 countries and a partner ecosystem including more than 1,500 system integrators and value-added resellers (up from 900 partners in 2020). Additionally, it significantly expanded its footprint in Asia/Pacific during 2020.

- **Marketing execution:** TIBCO's marketing draws on its strong reputation as a vendor of an iPaaS available on major cloud providers, an offering based on event-driven architecture, and its diverse partner ecosystem, which includes marketplaces.

- **Operations:** TIBCO maintains strong operational capability by offering high availability with disaster recovery and a wide variety of deployment choices across regions. It provides enhanced monitoring capabilities across hybrid and multicloud deployments for its platform.

Cautions

- **Industry strategy:** Although TIBCO offers industry accelerators for multiple sectors, including financial services, insurance, government and healthcare, its accelerators for API management are primarily focused on open banking and healthcare.

- **Innovation:** TIBCO Cloud Mashery trails competing offerings in terms of product features and innovation. It does not offer advanced features such as native service mesh support, API design and implementation, API testing and API monetization.

- **Market responsiveness:** While TIBCO reprioritized its roadmap to respond to the changed needs of its customers during the pandemic, some of its roadmap items took a backseat. TIBCO did not deliver some of the features it had planned for 2020, including support for Envoy and WebAssembly, which is still unavailable.

Tyk

Tyk is a Visionary in this Magic Quadrant. It offers an open-source API gateway, API analytics, a closed-source developer portal and an API management dashboard. It focuses on enabling cloud-native microservices, governance of APIs across diverse development teams and API-based data integrations using GraphQL.

Tyk is a "remote first" company with global operations and sales hubs in the U.S., the U.K. and Singapore. Its customers are mostly midsize and large organizations, the majority from the financial services, retail and telecom sectors.

Strengths

- **Market understanding**: Tyk has demonstrated vision by offering deep support for GraphQL, including the Universal Data Graph for creating and managing complex GraphQL APIs. Tyk offers complete support for the OAS 3.0 specification and plans to expand its portal to manage APIs across multiple API gateways.

- **Microservices and service mesh**: Tyk offers robust support for mediating microservices. It provides a Kubernetes operator that acts as an ingress controller to perform uptime tests, implement circuit breakers, and enable detailed tracing and monitoring of microservices in distributed environments.

- **Sales strategy and pricing**: Tyk attracts developers with a free, open-source gateway, as well as a free, limited-use SaaS version. Tyk offers flexible licensing models for its enterprise version, including an unmetered pricing model for customer-managed deployments. Its pricing for SaaS and managed deployments is based on scaling factors, such as the number of gateways, environments and regions in which users deploy the product.

Cautions

- **Overall viability:** Tyk is not as large as some of the other vendors in this Magic Quadrant by revenue. Although it is growing fast and aiming to be capital-efficient, Tyk will need to sustain growth rates well above the market average to maintain its competitiveness, visibility and mind share among prospective customers, especially in the large-enterprise segment.

- **Developer portal customization**: As a provider of a developer-focused platform, Tyk provides limited features for establishing API-based ecosystems. Its bootstrap-based developer portal is basic; it has limited ability to define API monetization plans and capture business metrics for API products.

- **Product strategy:** Tyk's services mainly focus on technology to enable faster onboarding of customers to its platform. With its focus on developer self-service, it largely depends on partners to provide implementation- and API-related consulting services and workshops.

WSO2

WSO2 is a Visionary in this Magic Quadrant. It offers WSO2 API Manager, an open-source API management solution. Additionally, in 2021, WSO2 launched Choreo, a cloud-based API management solution with a traditional PaaS subscription model. WSO2's API Manager Analytics functionality is offered as a service built on Microsoft Azure.

WSO2 combines integration and API management in both WSO2 API Manager and Choreo. This enables integrations to be exposed as managed APIs across cloud, on-premises, container-native and hybrid architectures. WSO2 also provides the ability to use two integration options in WSO2 API Manager, Micro Integrator (for microservices scenarios) and Streaming Integrator (for extraction, transformation and loading, and streaming) as stand-alone solutions, as well as a stand-alone identity management platform (WSO2 Identity Server).

WSO2 offers its products worldwide. Most of its users are in emerging markets, including South America, South Asia and the Middle East.

Strengths

- **Innovation:** WSO2 has shown leadership in implementing new API technologies, including support for publishing event-based APIs in its API developer portal offering using AsyncAPI.

- **Industry strategy:** WSO2 has demonstrated strong support for industry-specific solutions, especially in its top three vertical markets, namely banking, financial services and insurance, the government and public sector, and telecommunications and IT. WSO2 provides an Open Healthcare solution that focuses on healthcare interoperability, and an Open Banking offering and services to help its banking clients, either directly or through its partners, meet financial and regulatory requirements.

- **Partnerships:** WSO2 has a strong ecosystem, thanks to the many partners that use its open-source offering. Integration and reseller partners in over 75 countries generate awareness and sales opportunities for WSO2.

Cautions

- **Business model:** WSO2 is expanding its focus from on-premises, open-source products to include a cloud-based iPaaS platform, Choreo. But this platform has only just been released, so the extent of its market adoption remains to be seen.

- **Product strategy:** WSO2's API management offerings are strongly associated with its integration and identity management offerings. This can lead to product dependencies when, for example, WSO2 Identity Server is used for API access control in conjunction with WSO2's API management offerings.

- **Market understanding**: WSO2's products lack specific support for API product managers, such as the ability to create and manage API products and to measure them based on business value. WSO2 focuses on the technical aspects of API product management, such as the gathering of technical metrics on API performance usage, but beyond tracking API monetization, it does not track business metrics.

Vendors Added and Dropped

We review and adjust our inclusion criteria for Magic Quadrants as markets change. As a result of these adjustments, the mix of vendors in any Magic Quadrant may change over time. A vendor's appearance in a Magic Quadrant one year and not the next does not necessarily indicate that we have changed our opinion of that vendor. It may be a reflection of a change in the market and, therefore, changed evaluation criteria, or of a change of focus by that vendor.

Added

- Postman

- SmartBear

Dropped

- F5 (NGINX)

- Perforce (Akana)

- Sensedia

- Torry Harris

Inclusion and Exclusion Criteria

To qualify for inclusion in this Magic Quadrant, all vendors had to:

- Actively market, sell and support at least two of the following five functional areas to support full life cycle management of APIs:

  - Developer portals

  - API gateways

  - Policy management and analytics

  - API design and development

  - API testing

- Have made the qualifying offering generally available as of June 2020.

- Have a comprehensive, general-purpose offering not specific to one industry or limited to an adjacent market (such as iPaaS or application security). This offering had to be available either directly from the vendor or via publicly announced agreements with partners.

- Have generated revenue of at least $30 million (or the equivalent in other currency) from full life cycle API management in 2020.

  - Vendors providing an open-source or open-core product offering had to have generated revenue of at least $8 million (or the equivalent in other currency) per year from full life cycle API management. These figures include revenue from software, cloud-managed services, support and professional services relating to the full life cycle API management offering.

- Have had at least 150 paying customers for full life cycle API management in 2020.

- Have a reasonably wide geographic presence for sales, support and availability of services, with no more than 90% of their full life cycle management revenues for 2020 coming from one specific region.

Honorable Mentions

Gartner tracks more than 70 full life cycle API management vendors, several of which are new entrants to the market. New entrants often succeed at finding a niche audience and position their product as a better alternative to the leading vendors' offerings in one or more aspects of full life cycle API management.

We recognize six vendors with honorable mentions. Although they did not meet the inclusion criteria for this Magic Quadrant, they have an active presence and operations in the market. Their API management offerings serve as alternatives that may solve unique challenges for some prospective customers. The six vendors are:

- **Ambassador Labs:** Ambassador Labs offers Ambassador Edge Stack. Built on the open-source Envoy Proxy and Emissary-ingress API gateway, it can be useful for organizations seeking a scalable and secure gateway for Kubernetes environments, primarily for traffic management and ingress control. Edge Stack also includes a developer portal, a service catalog, and tooling for API development and testing (Telepresence). Ambassador Labs did not meet the inclusion criteria for revenue and number of paying customers.

- **Constellant:** Constellant offers a digital platform engine (dpEngine) that provides full life cycle ecosystem management to create, manage and scale API ecosystems and API marketplaces. dpEngine enables custom developer portals, as well as broader platform business models and application ecosystems through its Publisher, Developer, Partner and Marketplace modules. Constellant did not meet the inclusion criteria for revenue and number of paying customers.

- **Gravitee.io:** Gravitee.io offers Gravitee.io API Management, Access Management, Cockpit (a distributed control plane and a visual API designer) and Alert Engine. Gravitee.io API Management's core features are an API gateway, an API management console and an API portal; the product can be combined with the company's other offerings to extend its functionality. We believe it can be useful for organizations focused on cloud-native development. Gravitee.io did not meet the inclusion criteria for revenue and number of paying customers.

- **RapidAPI:** RapidAPI offers RapidAPI Enterprise Hub, the aim of which is to provide one place for all APIs in an organization. This can be useful to create an internal API hub, a partner API hub, or a federated API architecture with multiple API gateways, including those from other vendors and cloud providers. This vendor also offers RapidAPI Client (following its acquisition of Paw, an API development tool, in 2021) and RapidAPI Testing for automated functional API testing. RapidAPI did not meet the revenue requirement for inclusion in this Magic Quadrant.

- **Solo.io**: Solo.io offers Gloo Edge (an API gateway) and Gloo Portal (an API portal) as part of its API management suite. It also offers Gloo Mesh, an enterprise service mesh that supports multicluster and hybrid clouds. Solo.io supports API design and development with continuous integration/continuous delivery (CI/CD). It can be useful for organizations looking to use Istio- and Envoy-based service mesh solutions with Kubernetes environments. Solo.io did not meet the inclusion criteria for revenue and number of paying customers.

- **Stoplight**: Stoplight offers the Stoplight Platform for API Management, which includes Stoplight Studio — a tool for API design, publishing and collaboration, as well as linting, mocking, visibility and documentation. Stoplight also offers open-source tools such as Spectral (for API validation and linting), Prism (for API mocking) and Elements (for interactive API documentation). Stoplight's core feature is its strong support for API design — it can be useful for organizations looking to design and collaborate. Stoplight did not meet the revenue criterion for inclusion in this Magic Quadrant.

Evaluation Criteria

Ability to Execute

Gartner analysts evaluate vendors on the quality and efficacy of the processes, systems, methods and procedures that enable them to be competitive, efficient and effective, and to positively impact their revenue, customer retention and reputation.

We used the following criteria to assess vendors' Ability to Execute:

Product or Service: This criterion concerns core goods and services that compete in or serve the defined market. It considers current product and service capabilities, quality, feature sets, skills and so on. Goods and services can be offered natively or through OEM agreements/partnerships, as defined in the market definition and detailed in subcriteria.

Specifically, we evaluated vendors' capabilities using subcriteria relating to the four stages in an API's life cycle:

- Planning and design

- Implementation and testing

- Deployment and operation ("deploy and run")

- Versioning and retirement

Additionally, for the 2021 assessment cycle, Gartner placed greater emphasis on product scores in the Magic Quadrant by using the Critical Capability assessment scores each vendor received for the critical capabilities defined in the companion Critical Capabilities for Full Life Cycle API Management.

Overall Viability: Our evaluation of overall viability included assessment of vendors' overall financial health, as well as the financial and practical success of the relevant business units. It also included evaluation of the likelihood of vendors continuing to offer and invest in their products, as well as the products' positions within current portfolios.

For this market, we considered:

- Vendors' relative size (in terms of customers, revenue, and the scale, strength and resilience of their ecosystem)

- The impact of past acquisitions and the potential for future acquisitions

- The financial stability and continuity of offerings in this market

- The ability and effectiveness of partnerships to improve viability

- The size and quality of each vendor's active user community, relative to its target market

- The availability and effectiveness of professional and consulting services

Sales Execution/Pricing: This criterion concerns vendors' capabilities in all presales activities and the structures that support them. Included are deal management, pricing and negotiation, presales support and the overall effectiveness of the sales channel.

More specifically, for each vendor we considered:

- Revenue and customer growth

- The number and business impact of the projects it has implemented, and whether (and how) professional and consulting services have eased implementations

- The clarity and predictability of pricing models — on-premises, cloud, multicloud and hybrid — and their changes over time

- The ability to handle large and complex deals, including support and flexibility for volume growth, seasonality and predictability

Market Responsiveness/Record: This criterion concerns vendors' ability to respond, change direction, be flexible and achieve competitive success as opportunities develop, competitors act, customer needs evolve, and market dynamics change. It also considers each vendor's history of responsiveness to changing market demands.

More specifically, we assessed vendors' ability to:

- Quickly adapt and offer meaningful solutions in light of the dynamic nature of API programs and the furious pace of change that digital transformations increasingly demand

- Respond well to rapidly evolving conditions in the full life cycle API management market

- Respond and deliver superior alternatives to competitive trends, even if they do not lead those trends

■ Support clients during unforeseen and business-disrupting events, such as the COVID-19 pandemic

Marketing Execution: This criterion concerns the clarity, quality, creativity and efficacy of programs designed to deliver a message that will influence the market, promote a brand, increase awareness of products and establish a positive identification in the minds of customers. This "mind share" can be driven by a combination of promotional activity, thought leadership, social media activity, referrals and sales activity.

We assessed the degree to which vendors have:

■ Captured mind share, demonstrated thought leadership and gained a solid reputation in this evolving and growing market

■ Effectively devised and executed go-to-market strategies with substantial results

■ Appeared on competitive shortlists for full life cycle API management bids

■ Executed marketing and partnership programs to expand their influence

Customer Experience: This criterion concerns products, services and programs that enable customers to achieve anticipated results with the products evaluated. It also concerns the quality of supplier-buyer interactions, technical support and account support. Additionally, it addresses ancillary tools, customer support programs, the availability of user groups, service-level agreements (SLAs) and so on.

For this criterion, we specifically considered for each vendor:

■ The specificity and quality of domestic and international support contracts and SLAs for the availability of full life cycle API management offerings

■ Its track record of resolving customers' issues

■ The customer experience offered through acquisitions and partnerships

■ Support outside the vendor's home market

■ The reach and availability of service implementers, and efforts to expand these, such as training and certification programs

Operations: This criterion concerns the ability of a vendor to meet its goals and commitments. Factors include the quality of the organizational structure and the skills, experiences, programs, systems and other vehicles that enable a vendor to operate effectively and efficiently.

More specifically, for we considered each vendor's:

- Track record of meeting SLAs and its privacy certifications

- Scope in terms of, for example, people and data centers

- Reliability in relation to its hosted service platforms (for cloud offerings), and scalability and adaptability in relation to its software platforms (for on-premises deployments)

- Use of, and adherence to, metrics for efficiency, speed of change, implementation of new features and scale

Note on Weightings: *In this 2021 edition of the Magic Quadrant, the weightings for Overall Viability, Market Responsiveness/Record and Marketing Execution have changed to better reflect the current market.*

Table 1: Ability to Execute Evaluation Criteria

Evaluation Criteria ↓	Weighting ↓
Product or Service	High
Overall Viability	High
Sales Execution/Pricing	High
Market Responsiveness/Record	Medium
Marketing Execution	Medium
Customer Experience	High
Operations	High

Source: Gartner (September 2021)

Completeness of Vision

Gartner analysts evaluate vendors on their ability to convincingly articulate logical statements about the market's direction, innovation, customer needs and competitive forces, and how well these statements correspond to Gartner's view of the market.

We used the criteria below to assess vendors' Completeness of Vision.

Market Understanding: This criterion concerns vendors' ability to understand customer needs and to translate that understanding into products and services. Vendors with a clear vision of the market listen to and understand customers' demands, and can shape or enhance market changes with their vision.

We assessed vendors' understanding of (among other things):

- Customers' present and future priorities, use cases and challenges

- The evolution of these priorities and use cases

- The role of APIs and API management in digital transformation, modernization, composability, innovation, productization and advancement of business

- General, geographic and industry-specific market opportunities

Marketing Strategy: For this criterion, we looked for clear, differentiated messaging, consistently communicated internally, and externalized through social media, advertising, customer programs and positioning statements.

More specifically, we looked for a strategy for (among other things):

- Clear articulation of an offering's value proposition in the context of the customer's business

- Top-line and differentiated messaging by buyer persona

- Competitiveness

- API evangelism, conferences, industry leadership, thought leadership and partnerships

Sales Strategy: For this criterion, we looked for a sound strategy for selling that uses appropriate networks, including direct and indirect sales, marketing, service and communication networks. Partners may extend the scope and depth of a vendor's market reach, expertise, technologies, services and customer base.

More specifically, we looked for:

- The right balance of direct and indirect sales vehicles

- Targeting of the right mix of small and midsize businesses

- Sales in specific geographies and to specific industries, such as the financial services and healthcare sectors

- A sound business plan and an effective strategy that uses presale work, API champions, activities that demonstrate thought leadership, and professional and consulting services

Offering (Product) Strategy: This criterion concerns vendors' approach to product development and delivery, with emphasis on market differentiation, functionality, methodology and features in relation to current and future requirements.

Specifically, we assessed:

- Offering plans and roadmaps (with dates)

- Track record, future maturity and completeness

- Offerings' overall design concepts and architectures

- How seamlessly and effectively partners' offerings are used (where applicable) to extend and enhance a vendor's offerings

Business Model: This criterion concerns the design, logic and execution of vendors' business propositions with a view to achieving continued success.

Specifically, we examined:

- How vendors' target or maintain profitability

- Pricing models and sales strategy, and how these work in relation to cloud, multicloud, hybrid and on-premises offerings

- Partnerships, their effectiveness and viability, from a user perspective

- Vendors' professional and consulting services, how they recognize revenue and capitalize on investments in research and development, and their growth strategies (including mergers and acquisitions) across geographies

Vertical/Industry Strategy: This criterion assesses vendors' strategies to direct resources (sales, product, development), skills and products to meet the specific needs of individual market segments, including industries.

Specifically, we examined:

- The industries that vendors focus on, the industry-specific solutions (if any) that they offer, and how successful or differentiating these solutions are (or are likely to be)

- Industry-specific blueprints, accelerators, support for API standards and starter kits (if there are any)

- Support for specific industries in which regulatory or business transformations are occurring around the world

Innovation: This criterion looks for direct, related, complementary and synergistic layouts of resources, expertise or capital for investment, consolidation, defensive or preemptive purposes. Innovation is essential for survival in the full life cycle API management market.

More specifically, we assessed:

- How vendors plan to innovate in terms of technology, business, industry and customer service

- How effectively and systematically innovative ideas are filtered and funneled through product development

- Vendors' track records of anticipating or leading new trends in the market

- Novel and unique approaches, solutions and products resulting from or likely to result in transformative change in the market

Geographic Strategy: This criterion concerns vendors' strategies to direct resources, skills and offerings to meet the specific needs of geographies outside their "home" or native geography, either directly or through partners, channels and subsidiaries, as appropriate for the geography and market.

Specifically, we looked for the ability to:

- Identify and engage with the most fertile locations for vendors' capabilities

- Expand into geographies not explicitly addressed at present

- Fulfill nondomestic projects via support centers, sales offices and partner networks

- Support complex international requirements and features such as regional-specific compliance with local laws and regulations

Note on Weightings: *In this 2021 edition of the Magic Quadrant, the weightings for Marketing Strategy, Vertical/Industry Strategy and Geographic Strategy have changed to better reflect the current market.*

Table 2: Completeness of Vision Evaluation Criteria

Evaluation Criteria ↓	*Weighting* ↓
Market Understanding	High
Marketing Strategy	High
Sales Strategy	High
Offering (Product) Strategy	High
Business Model	High
Vertical/Industry Strategy	Medium
Innovation	High
Geographic Strategy	Medium

Source: Gartner (September 2021)

Quadrant Descriptions

Leaders

Leaders are vendors that execute strongly and that lead and influence the market. Recent entrants to this market that have a limited record of execution are less likely to be Leaders. The same applies to strongly executing vendors that are overly risk-averse or that do not effectively exploit innovation trends.

The most distinctive attribute of Leaders is that they address the widest variety of API use cases: multiexperience architecture, integration using APIs, internal API management, productization of APIs and open banking. Leaders make sure their offerings can help clients thrive in a dynamic environment.

Vendors can become Leaders in this market by:

- Acquiring another well-positioned vendor, integrating its technology into a wider application infrastructure offering and keeping up with the pace of API management innovation.

- Addressing digital transformations, regulatory demands and modernization initiatives and their challenges head-on, with thought leadership and product functionality, and by offering widely deployable, well-supported API management solutions for a number of industries and geographies.

Leaders understand the market trends that will benefit them and their clients' business strategies by enabling them to restructure their business operations or advance digital transformations. Leaders see the business potential of API programs, communicate this potential to business units and help their clients realize that potential.

Challengers

Challengers generally execute well for the types of work for which they offer functionality, but they have a blurred or incomplete view of the market's direction, sometimes due to a lack of innovation, marketing and sales focus on API management.

The future of these providers depends on how aggressive and proactive they are in addressing their current shortcomings. If they innovate to fulfill the pressing requirements of today's API programs, and market their offerings effectively, it is likely that they will become Leaders. Otherwise, they may become Niche Players or Visionaries, or drop out of the Magic Quadrant. They may also remain Challengers, but this market's strong dynamics and fast evolution over the past 18 months indicate that even maintaining their current position will require them to evolve.

Visionaries

Visionaries approach this market from an innovative angle. Although they are typically smaller, in terms of revenue and market share, than Leaders and Challengers, and may offer an incomplete set of functionalities, they have the power and mind share to grow their capabilities, often in a different way from established Leaders.

2020 was a relatively quiet year of stabilization and growth in the full life cycle API management market. As a group, but with some notable exceptions, Visionaries did not come up with compelling visions in this market. In fact, some faced substantial market pressures due to the pandemic and found it challenging to remain Visionaries.

Visionaries generally make good acquisition targets for established, larger players that want to buy their way into the Leaders quadrant. Acquisitions are continuing, but the number of vendors with effective vision is reducing.

Niche Players

Niche Players focus on a segment of the market. That segment is typically defined by a specific application or application infrastructure ecosystem, or by another characteristic, such as industry, client size (and spending power), geographic area or open-source orientation. Niche Players either have an effective strategy but a focus on a particular market niche, or they become Niche Players because of shortcomings in terms of execution or a lack of innovation.

Within their niche, these vendors' offerings may be more functional than those of Leaders. An improved position on the Magic Quadrant might indicate that a Niche Player is maturing or that it is extending its offering.

Niche Players' Ability to Execute is limited to their focus areas and is assessed accordingly. Their ability to innovate and survive in this market is limited by their narrow focus, but they often tend to move much faster than vendors in other quadrants. Niche Players can progress to other quadrants by improving their marketing strategy and fostering innovation.

Context

Although the global pandemic has forced CEOs to rethink their priorities in much of the world, most anticipate a healthy economic recovery, rather than stagnation. Executives continue to focus on digitalization as a top priority for returning to growth (see 2021 Gartner CEO Survey: The Year of Rebuilding).

APIs play a crucial role in enabling digitization. They provide the foundation for modernization and help organizations build successful business ecosystems (see Hype Cycle for APIs and Business Ecosystems, 2021). The number of APIs within organizations is growing rapidly in IT departments and in lines of business. APIs form the connection points between platforms and ecosystems. Every connected mobile app, every website and every application deployed on a cloud service uses APIs. Software engineering leaders must develop a systematic approach to manage and govern the use of APIs across the organization by using a full life cycle API management offering.

Full life cycle API management involves the planning, design, implementation, testing, publication, operation, consumption, maintenance, versioning and retirement of APIs. Full life cycle API management platforms have matured considerably in the past few years, with the emergence of, among other things, improved API security features (see API Security: What You Need to Do to Protect Your APIs). These platforms can also work with, and take advantage of, microservices in mesh app and service architectures (see Ensure Your API Management Solution Supports Modern API Trends Such as Microservices and Multicloud).

Full life cycle API management platforms have also emerged as key components of successful business-driven automation initiatives. The 2021 Gartner Hyperautomation Survey found 11% of the responding business technologists indicating that API management platforms were among the three tools they used most (based on frequency and volume) to support automation initiatives during the prior 12 months. [1]

Packaged software applications — such as iPaaS, low-code application platforms and application security products — may offer capabilities for creating and exposing APIs. However, these capabilities are often limited to enabling a specific set of APIs and are not suitable for managing a comprehensive API strategy. The API features of packaged software applications can serve as complements to full life cycle API management platforms, but they are not substitutes for them. Software engineering leaders should use this Magic Quadrant and its companion Critical Capabilities report as a guide to finding the vendor offering best suited to their API management needs.

Market Overview

The full life cycle API management market grew by 24% in 2020, expanding to $2.1 billion, despite a challenging year (see Market Share Analysis: Full Life Cycle API Management, Worldwide, 2020). It remains the third-fastest growing segment of the application infrastructure and middleware market. Full life cycle API management technologies and practices are enabling all organizations — regardless of size, region or industry — to accelerate their growth.

Market dynamics: 2020 was an active year for mergers and acquisitions and investor funding of full life cycle API management vendors. Two private equity firms, Francisco Partners and TPG Capital, acquired Boomi in May 2021 for $4 billion, a development that is expected to influence this market positively. RapidAPI, an emerging vendor, acquired Paw, an API design vendor. Other vendors, including Kong, secured substantial series funding throughout 2020.

Full life cycle API management remains a dynamic and thriving market with substantial potential for both investors and vendors looking to create and manage APIs as add-ons to their offerings. Gartner expects this market to continue its strong double-digit growth for at least the next five years. End users can expect increased choice, a healthier market and more viable partnerships as they look to revamp their API strategies and API-based business models.

Despite the overall 24% revenue growth and strong M&A activity, 2020 was a tough year in some regions. This has disproportionately affected vendors with go-to-market strategies for specific regional markets, which has resulted in some vendors falling below the increased revenue thresholds for qualification for inclusion in this Magic Quadrant.

What buyers should know: This 2021 Magic Quadrant represents a more mature and stable field of vendors, compared with the lineup in 2020. However, end users' expectations and needs have also become more demanding (see Top 10 Things Software Engineering Leaders Need to Know About APIs). The gap between full life cycle API management offerings' capabilities and customers' expectations continues to widen. As a result, prospective buyers must pay closer attention to product details, especially in the following areas:

- **Support for API life cycle stages:** Not all vendors support all four life cycle stages (planning and design, implementation and testing, deployment and operation, and versioning and retirement) equally well. For example, some vendors do not offer an API gateway but support integration of a few third-party gateways to which customers must purchase or subscribe. Some vendors provide nominal developer portals and offer weaker support for development of APIs. Customers must review this aspect in light of the critical capabilities (described in the companion Critical Capabilities for Full Life Cycle API Management) to ensure alignment with their organization's API management needs.

- **Market segmentation:** Vendors in this Magic Quadrant tend to cater to three major segments of buyers: (1) Organizations looking to advance their digital strategies by adopting API products and business models based on APIs; (2) Organizations looking to build foundational capabilities by addressing legacy, system, process and business integration; (3) Organizations that are more engineering-savvy and looking to use APIs to build modernized architectures (including microservices and service meshes). Although the capabilities required for these three buyer segments differ, vendors do not always make these distinctions clear in their marketing messages. As a result, buyers may find it difficult to assess which offering best suits their needs, especially when their organization falls into more than one of the three segments. To select the best-fit full life cycle API management offering, buyers must develop a good understanding of their API strategy, identify their specific needs and gain consensus among stakeholders in their organization.

- **Multicloud API management**: Cloud vendors (such as AWS, Microsoft [Azure] and Google) and their native offerings deeply influence vendor choices for prospective buyers. Cloud API gateways provide strong operational capabilities and access to serverless and other cloud-native services. These gateways are attractive for many organizations (and essential for some). However, customers who adopt these offerings often need to procure multiple API management solutions to support on-premises and/or multicloud scenarios. Although vendors have improved their capabilities, no one vendor provides strong support for both multicloud and multiproduct API management.

Evidence

Corporate Transaction Notification: Boomi

[1] **The 2021 Gartner Hyperautomation Survey** was conducted online during March 2021 among 558 business technologists from North America (n = 226), Europe (n = 146), Latin America (n = 78) and Asia/Pacific (n = 108).

To qualify to answer the survey, respondents needed to:

- Have created, built or code analytics or technology capabilities on their own or with input from others in the past 12 months.

- In the same time period, have used at least one of the tools to produce analytics or technology capabilities for work. Twenty-one tools were considered in four categories: application development tools, automation tools, integration tools, and data science and AI tools.

The results of this survey do not represent global findings or the market as a whole. They reflect the views of the respondents and companies surveyed.

Evaluation Criteria Definitions

Ability to Execute

Product/Service: Core goods and services offered by the vendor for the defined market. This includes current product/service capabilities, quality, feature sets, skills and so on, whether offered natively or through OEM agreements/partnerships as defined in the market definition and detailed in the subcriteria.

Overall Viability: Viability includes an assessment of the overall organization's financial health, the financial and practical success of the business unit, and the likelihood that the individual business unit will continue investing in the product, will continue offering the product and will advance the state of the art within the organization's portfolio of products.

Sales Execution/Pricing: The vendor's capabilities in all presales activities and the structure that supports them. This includes deal management, pricing and negotiation, presales support, and the overall effectiveness of the sales channel.

Market Responsiveness/Record: Ability to respond, change direction, be flexible and achieve competitive success as opportunities develop, competitors act, customer needs evolve and market dynamics change. This criterion also considers the vendor's history of responsiveness.

Marketing Execution: The clarity, quality, creativity and efficacy of programs designed to deliver the organization's message to influence the market, promote the brand and business, increase awareness of the products, and establish a positive identification with the product/brand and organization in the minds of buyers. This "mind share" can be driven by a combination of publicity, promotional initiatives, thought leadership, word of mouth and sales activities.

Customer Experience: Relationships, products and services/programs that enable clients to be successful with the products evaluated. Specifically, this includes the ways customers receive technical support or account support. This can also include ancillary tools, customer support programs (and the quality thereof), availability of user groups, service-level agreements and so on.

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

Completeness of Vision

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

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

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

Offering (Product) Strategy: The vendor's approach to product development and delivery that emphasizes differentiation, functionality, methodology and feature sets as they map to current and future requirements.

Business Model: The soundness and logic of the vendor's underlying business proposition.

Vertical/Industry Strategy: The vendor's strategy to direct resources, skills and offerings to meet the specific needs of individual market segments, including vertical markets.

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

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

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Magic Quadrant for Application Services Governance - 9 April 2015

Magic Quadrant for Application Services Governance - 8 August 2013

Magic Quadrant for SOA Governance Technologies - 17 October 2011

Magic Quadrant for Integrated SOA Governance Technology Sets - 31 March 2009

Magic Quadrant for Integrated SOA Governance Technology Sets, 2007 - 31 December 2007

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How Markets and Vendors Are Evaluated in Gartner Magic Quadrants

Top 10 Things Software Engineering Leaders Need to Know About APIs

Federate, Rebrand and Recharter Your API Center of Excellence to Enable an API Platform Team

Gartner's API Strategy Maturity Model

Table 1: Ability to Execute Evaluation Criteria

Evaluation Criteria ↓	Weighting ↓
Product or Service	High
Overall Viability	High
Sales Execution/Pricing	High
Market Responsiveness/Record	Medium
Marketing Execution	Medium
Customer Experience	High
Operations	High

Source: Gartner (September 2021)

Table 2: Completeness of Vision Evaluation Criteria

Evaluation Criteria ↓	Weighting ↓
Market Understanding	High
Marketing Strategy	High
Sales Strategy	High
Offering (Product) Strategy	High
Business Model	High
Vertical/Industry Strategy	Medium
Innovation	High
Geographic Strategy	Medium

Source: Gartner (September 2021)