## Now Tech: API Management Solutions, Q4 2018

Forrester's Overview Of 22 API Management Providers

by Randy Heffner October 24, 2018

### Why Read This Report

Companies use API management solutions to set up an API foundation for digital transformation, manage relationships with API users, and drive business value from APIs. But to access these benefits, you'll first have to select from a diverse set of vendors — vendors that vary by size, functionality, geography, and vertical market focus. Application development and delivery (AD&D) pros should use this report to understand the value they can expect from API management solutions and select vendors based on size and fit with their organization's API strategy.

## Key Takeaways

# Improve Digital Agility And Engagement With API Management

APIs foster business agility and innovation by allowing an organization to dynamically deliver its assets and capabilities for customer engagement and ecosystem partnering. Whether connecting one's own applications or connecting across a digital business ecosystem, API management solutions are key to one's technology platform and specifically to one's broader API platform.

# Select Vendors Based On Size And Fit With Your API Strategy

Whether it's open source projects or global software vendors, buyers should understand whether and how candidate vendors provide one or more of five segments of API management functionality: focused API publishing; API user relationship management; API products and billing, federated API ecosystems; and enterprise API strategy.

# **Examine Your API Strategy Before Looking At API Management**

The most important elements of an API strategy to identify before diving into vendor analysis are your API business strategy, your approach to and locus of API governance, and the need for extensive customization and branding in your API user portal.

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by Randy Heffner with Christopher Mines, Allison Vizgaitis, and Andrew Reese October 24, 2018

### **Table Of Contents**

- 2 Improve Digital Agility And Engagement With API Management
- 2 Select Vendors Based On Size And Fit With Your API Strategy

API Management Solutions Market Presence Segments

API Management Solution Functionality Segments

9 Align Individual Vendor Solutions To Your Organization's Needs

Recommendations

- 15 Examine Your API Strategy Before Looking At API Management
- 16 Supplemental Material

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## Improve Digital Agility And Engagement With API Management

APIs foster business agility and innovation by allowing an organization to dynamically deliver assets and capabilities for customer engagement and ecosystem partnering. APIs open new angles into business strategy and thus deserve the attention of senior management — even CEOs and chief strategy officers. APIs embody business relationships; fully leveraging the possibilities they create requires disciplined API user relationship management. Whether APIs connect an organization's own applications or connect the organization to multiple digital business ecosystems, API management solutions are key to one's technology platform and, specifically, to one's broader API platform. Forrester defines an API management solution as:

A foundation for establishing, managing, and securing digital business relationships via direct applications connections within and between organizations and individuals, centering first on REST APIs but extending to encompass any means of digital connection.

Some organizations first approach API management solutions to address API security concerns — and a solution's API gateway certainly does this — but it's better to consider them as API user relationship management solutions. Through an admin portal, an API provider organization defines what APIs will be available under what conditions and policies. Through an API user portal, developers establish relationships to use available APIs. The API gateway is simply there to enforce the agreement between the two. In other words, enterprises engaged in digital business pursue API management to:

- > Establish, organize, and manage a catalog of APIs for digital agility and engagement. APIs enable rapid reconfiguration of business capabilities, relationships, and processes, within and across enterprise boundaries. API management's catalog of APIs organizes who can see and use APIs and manages security and access appropriate to each API user.
- > Manage relationships with API users. A provider's API users may be internal developers, B2B partners and customers (and developers working on their behalf), individuals working in a garage, or others. Each of these relationships has its own characteristics and demands, and the more flexible API management is, the better it supports rich engagement with each.
- Derive the greatest digital business value from APIs and more. API management is a business application, not a technical infrastructure, to maximize the business value of the huge range of digital scenarios that APIs enable. Companies currently favor REST APIs, but they will adopt Kafka, WebSockets, and many more types of digital bonding in the future.

## Select Vendors Based On Size And Fit With Your API Strategy

We've based our analysis of the API management solutions market on two factors: market presence and functionality segments that may individually or together comprise an organization's API strategy.



#### **API Management Solutions Market Presence Segments**

We segmented the vendors in this market into three categories, based on revenue: large established players (more than \$50 million in annual API management solution revenue), midsize players (\$10 million to \$50 million in API management solution revenue), and smaller players (less than \$10 million in API management solution revenue) (see Figure 1).6 We did not include commercial vendors that we estimated to have less than \$1 million in revenue, but we did include open source projects that may have less than that.



FIGURE 1 Now Tech Market Presence Segments: API Management Solutions, Q4 2018

NOW LARGE >\$50M in annual category revenue **TECH** Microsoft\* Axway\* Mulesoft\* **CA Technologies\*** API Management **TIBCO Software\*** Google\* Solutions IBM\* Q4 2018 MIDSIZE \$10M to \$50M in annual category revenue Oracle\* Sensedia Red Hat\* **Software AG\* WSO2** Rogue Wave Software\* SAP AG\* SMALL <\$10M in annual category revenue **Torry Harris Business Adobe** Solutions\* APInf\* Tyk Technologies Fiorano Software\* Wicked\* Fusio\* Kong\*

<sup>\*</sup>Forrester estimate

#### **API Management Solution Functionality Segments**

API management solutions are all quite flexible; you can customize and integrate almost any solution to support almost any API strategy. To explore functionality at a deeper level, we broke the API management solutions market into five distinct but complementary segments, each with varying out-of-the-box capabilities, to support different elements of an API provider organization's strategy. The solutions on the market provide various combinations of the five segments, depending on each vendor's strategy and investments based on its understanding of API providers' needs. In addition, a vendor may provide a portion of the functionality for a segment without providing it completely enough for Forrester to credit the vendor with that segment (see Figure 2 and see Figure 3):

- > Focused API publishing delivers the core of API management. Certain vendors strategically choose to focus strictly on the core elements: an admin portal, a basic API user portal, and an API gateway. All vendors provide these, but one that provides only these may not invest in features like discussion forums, blogs, and rich tools for API user engagement, aiming for API providers that will invest heavily in custom portal functionality and branding tuned specifically to their unique API business goals and context. Some vendors, being early in their product development, are in this segment for now but will provide more in the future.
- API user relationship management engages and woos developers. When API providers pursue open web APIs, aiming to attract large API user audiences developing interesting apps, they must treat these developers like customers whether or not the API provider charges for API use. To meet this need, API management vendors must invest heavily in features for great API documentation, rich developer experience, and superior tools for API product managers to engage with developers individually and as groups. This requires deep integration among admin portal, API user portal, and gateway.<sup>7</sup>
- API products and billing provide a foundation for direct monetization. There are many ways to monetize APIs indirectly, such as building B2B partner communities, but API providers that directly charge for API use need deep features for assembling APIs into API products and setting access tiers with different combinations of pricing, discounting, and access rights. Although any API management solution can send data to a billing system, solutions in this segment have out-of-the-box integration with billing providers and may also have features for settling billing disputes and adjustments.<sup>8</sup>
- > Federated API ecosystems allow multiple API providers to join forces. The API economy is in its early days, but some providers are considering go-to-market strategies and ecosystem models that involve multiple API provider partners. This creates nuanced requirements for an API management solution's identity, access, and governance capabilities. For example, API providers may allow multiple firms to publish to a unified portal, perhaps even combining APIs from different firms and separate API catalogs into a single API product. Many models are possible, so API providers need federation built into several major API management functions.9



> Enterprise API governance enhances organizational maturity and competence. The greatest value with APIs comes not individually but rather from coordinated portfolios of APIs and streams of applications that use them. API portfolio value requires a certain degree of coordination and collaboration — i.e., governance — across API creators. Also, enterprise portfolios of APIs may reach into the thousands. To meet these demands, API providers need deep features for teams, API ownership, collaborative API design processes, and flexible-but-formal life-cycle management controls over API planning, design, and publishing.



FIGURE 2 Now Tech Functionality Segments: API Management Solutions, Q4 2018, Part 1

	Focused API publishing	API user relationship management	API products and billing
Portal suitable for engaging external API users	•••	•••	•••
API authentication and rate limiting	•••	•••	•••
API proxy creation	•••	•••	
API attack protection	•••	•••	
Tooling for REST API design and specification	•••		
Roles, teams, organizations, and API ownership for API providers	•••		
Formal life-cycle management and onboarding flows			•••
Configurable structure for API user portal and documentation	•••	•••	
Multiple tools and strategies for API user engagement		•••	
Integrated, customizable, drilldown API analytics	•••	•••	
Configurable API product and packaging structures		•••	
Out-of-the-box integration for API pricing and billing			
Delegated team administration for B2B API users			•••
Structures for crafting federated partner ecosystems	***	***	

■■■ High segment functionality ■■■ Moderate segment functionality ■■■ Low segment functionality

FIGURE 3 Now Tech Functionality Segments: API Management Solutions, Q4 2018, Part 2

	Federated API ecosystems	Enterprise API governance
Portal suitable for engaging external API users	•••	•••
API authentication and rate limiting	•••	•••
API proxy creation	•••	•••
API attack protection		•••
Tooling for REST API design and specification	•••	•••
Roles, teams, organizations, and API ownership for API providers		•••
Formal life-cycle management and onboarding flows		•••
Configurable structure for API user portal and documentation		
Multiple tools and strategies for API user engagement		•••
Integrated, customizable, drilldown API analytics		•••
Configurable API product and packaging structures		•••
Out-of-the-box integration for API pricing and billing	•••	•••
Delegated team administration for B2B API users	•••	•••
Structures for crafting federated partner ecosystems	***	***

■■■ High segment functionality ■■■ Moderate segment functionality ■■■ Low segment functionality

## Align Individual Vendor Solutions To Your Organization's Needs

The following tables provide an overview of vendors with details on functionality category, geography, and vertical market focus (see Figure 4, see Figure 5, and see Figure 6). These tables also highlight whether the solution is fully open source, along with additional products and capabilities each vendor offers related to API platforms and API implementation, including via microservices and integration.



FIGURE 4 Now Tech Large Vendors: API Management Solutions, Q4 2018

LARGE >\$50M in annual API management solution revenue

	Primary functionality segments	Geographic presence (by revenue %)	Vertical market focus (top three by revenue %)	Additional offerings for API platforms and strategy
Axway	Focused API publishing; federated API ecosystems	NA 41%; EMEA 52%; AP 5%; LATAM 2%*	Financial services; healthcare; supply chain (logistics, manufacturing, and retail)	Full-featured API security and messaging gateway; non-REST API support; microservices product/platform
CA Technologies	Focused API publishing	NA 64%; EMEA 22%; AP 9%; LATAM 5%	Financial services/insurance; public sector; communications/ media	Full-featured API security and messaging gateway; non-REST API support; API runtime management; API testing tools; external API monitoring; microgateway; microservices product/platform
Google	Focused API publishing; API user relationship management; API products and billing; enterprise API governance	NA 60%; EMEA 25%; AP 11%; LATAM 4%*	Telecommunications; retail; technology	Non-REST API support; API runtime management; external API monitoring; microgateway; microservices product/platform; integration platform; cloud infrastructure platform
ІВМ	Focused API publishing; API user relationship management; API products and billing; federated API ecosystems; enterprise API governance	NA 32%; EMEA 42%; AP 16%; LATAM 1%	Financial; healthcare; distribution	Full-featured API security and messaging gateway; non-REST API support; API runtime management; API testing tools; microgateway; microservices product/platform; integration platform; cloud infrastructure platform

<sup>\*</sup>The vendor did not provide information for this cell; this is Forrester's estimate.

FIGURE 4 Now Tech Large Vendors: API Management Solutions, Q4 2018 (Cont.)

LARGE >\$50M in annual API management solution revenue

	Primary functionality segments	Geographic presence (by revenue %)	Vertical market focus (top three by revenue %)	Additional offerings for API platforms and strategy
Microsoft	Focused API publishing	NA 47%; EMEA 39%; AP 11%; LATAM 3%	Manufacturing; professional services; retail	Non-REST API support; API runtime management; external API monitoring; microservices product/platform; integration platform; cloud infrastructure platform
Mulesoft	Focused API publishing; federated API ecosystems	NA 65%; EMEA 24%; AP 10%; LATAM 1%	Financial services; retail and consumer goods; government/ public sector	Full-featured API security and messaging gateway; API testing tools; external API monitoring; integration platform
TIBCO Software	Focused API publishing; API user relationship management	NA 58%; EMEA 30%; AP 8%; LATAM 4%*	Business services; retail; telecommunications	Non-REST API support; microgateway; microservices product/platform; integration platform

<sup>\*</sup>The vendor did not provide information for this cell; this is Forrester's estimate.

FIGURE 5 Now Tech Midsize Vendors: API Management Solutions, Q4 2018

## MIDSIZE \$10M to \$50M in annual API management solution revenue

	Primary functionality segments	Geographic presence (by revenue %)	Vertical market focus (top three by revenue %)	Additional offerings for API platforms and strategy
Oracle	Focused API publishing	NA 52%; EMEA 28%; AP 15%; LATAM 5%*	Financial services; retail; telecommunications	Microservices product/platform; integration platform; cloud infrastructure platform
Red Hat	Focused API publishing; API products and billing	NA 49%; EMEA 40%; AP 10%; LATAM 1%*	Financial services; transportation and logistics; retail	Microgateway; microservices product/platform; integration platform
Rogue Wave Software	Focused API publishing; API user relationship management; API products and billing; federated API ecosystems; enterprise API governance	NA 69%; EMEA 25%; AP 6%; LATAM 0%	Banking; software and services; capital goods	Non-REST API support
SAP AG	Focused API publishing	NA 38%; EMEA 50%; AP 10%; LATAM 2%*	Consumer products; professional services; retail	Non-REST API support; microservices product/platform; integration platform; cloud infrastructure platform

<sup>\*</sup>The vendor did not provide information for this cell; this is Forrester's estimate.

FIGURE 5 Now Tech Midsize Vendors: API Management Solutions, Q4 2018 (Cont.)

## MIDSIZE \$10M to \$50M in annual API management solution revenue

	Primary functionality segments	Geographic presence (by revenue %)	Vertical market focus (top three by revenue %)	Additional offerings for API platforms and strategy
Sensedia	Focused API publishing; API user relationship management; enterprise API governance	EMEA 1%; LATAM 99%	Payments; eCommerce; banking	Microgateway
Software AG	Focused API publishing; API user relationship management; API products and billing; federated API ecosystems; enterprise API governance	NA 42%; EMEA 46%; AP 8%; LATAM 4%*	Financial services; government; retail	Full-featured API security and messaging gateway; non-REST API support; API runtime management; microgateway; microservices product/platform; integration platform
WSO2	Focused API publishing; API user relationship management; federated API ecosystems; enterprise API governance	NA 50%; EMEA 37%; AP 7%; LATAM 6%	Banking and finance; hospitality and retail; communications and media	Non-REST API support; microgateway; integration platform; fully open source solution

<sup>\*</sup>The vendor did not provide information for this cell; this is Forrester's estimate.

FIGURE 6 Now Tech Small Vendors: API Management Solutions, Q4 2018

### SMALL <\$10M in annual API management solution revenue

	Primary functionality segments	Geographic presence (by revenue %)	Vertical market focus (top three by revenue %)	Additional offerings for API platforms and strategy
Adobe	Focused API publishing	NA 71%; EMEA 19%; AP 5%; LATAM 5%	IT industry; financial services; government	Non-REST API support
APInf	Focused API publishing	NA 5%; EMEA 85%; AP 10%; LATAM 0%*	Government; education; business services*	Fully open source solution
Fiorano Software	Focused API publishing	NA 43%; EMEA 32%; AP 25%; LATAM 0%*	Financial services; technology; telecommunications*	Integration platform
Fusio	Focused API publishing	EMEA 100%*	High-tech; education*	Fully open source solution
Kong	Focused API publishing	NA 45%; EMEA 35%; AP 15%; LATAM 5%*	Travel; business services; high-tech*	Microgateway
Torry Harris Business Solutions	Focused API publishing; federated API ecosystems; enterprise API governance	NA 1%; EMEA 90%; AP 9%; LATAM 0%	Telecommunications; energy; banking and financial services	Non-REST API support; API testing tools; microgateway
Tyk Technologies	Focused API publishing	NA 30%; EMEA 40%; AP 25%; LATAM 5%	Media/TV/publishing; retail; banking and insurance	Microgateway
Wicked	Focused API publishing	EMEA 95%; AP 5%*	Professional services; media, entertainment, and leisure; education and social services*	Microgateway; fully open source solution

<sup>\*</sup>The vendor did not provide information for this cell; this is Forrester's estimate.

#### Recommendations

## Examine Your API Strategy Before Looking At API Management

AD&D pros must be wary of rushing to fill immediate API needs with an API management solution or some other API-related product or tool. APIs have major touchpoints with digital transformation, B2B partnering, value chain integration (both downstream to customers and upstream to suppliers and partners), integration strategy, application development, mobile apps, and more. Choosing a vendor too hastily can easily create obstacles to realizing all the value APIs can provide for the organization — or force it to acquire more than one API management solution to meet all of its needs. Before building your long list of vendors (much less your shortlist), the most important API strategy planning is to:

- defines how APIs will build an organization's agility and ability to drive ecosystem engagement, operational excellence, customer obsession, and revenue (whether direct or indirect revenue from APIs). It sets context for how and when an organization may use B2B, open web, internal, and/ or product APIs. More importantly, it sets priorities for needs like engagement with API users, API product definition, and ecosystems or business models built around APIs. Support for each of these (and other) areas varies widely across vendors.<sup>11</sup>
- Identify your organization's approach to and locus of API governance. Forrester's enterprise API governance segment calls out requirements that API management solutions may fulfill as a central coordination point for planning, designing, and managing the potentially huge collections of APIs that large enterprises deliver. Some organizations may instead choose other tools and mechanisms for API planning and governance (e.g., enterprise architecture tools, ad hoc spreadsheets, and continuous integration and development tools). For an organization with the requisite maturity and discipline for API governance, tool-based automation can help greatly either way.<sup>12</sup>
- > Identify your API portal's need for extensive customization and branding. In some scenarios, an organization may want its external API portal to have highly customized structure, content, and functionality. For example, to implement unique API-based business models, make it easy to use complex APIs, integrate API publishing with other digital channels, or simply aim for the highest quality developer experience. In such cases, a solution's out-of-the-box features for API user engagement, API products, and the like may not be a match. When the mismatch is great enough, it's best to take a do-it-yourself approach using a vendor that specializes in focused API publishing.

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## Supplemental Material

#### **Market Presence Methodology**

We defined market presence in Figure 1 based on a vendor's revenue specifically for its API management solution which, depending on product packaging, may include certain closely associated products. Forrester requested this information from vendors, many of whom declined to provide it, in which case we made estimates based on available secondary information such as disclosures of customer numbers, frequency of client mentions of the vendor, and product cost information. We've marked companies with an asterisk if we estimated revenues or information related to geography or industries. Forrester fact-checked this report with vendors before publishing.



#### **Endnotes**

- APIs allow an enterprise to go beyond its traditional offerings to pursue new markets and customers by creating new products and services from its assets, data, or processes. They can also create new go-to-market strategies and new value for existing offerings, such as targeting customers through influencers rather than targeting them directly. See the Forrester report "How APIs Reframe Business Strategy."
- <sup>2</sup> Forrester recommends using changing regulations and other disruptions as opportunities to advance API strategy and digital business transformation. See the Forrester report "APIs Underpin A Digital Business Platform."
- <sup>3</sup> Digital transformation should be viewed not as a once-and-done project but rather as entry into a mode of operation where an enterprise assumes that change is unforeseeable and unpredictable. This requires framing an API-based platform that delivers sustainable business agility. See the Forrester report "APIs Underpin A Digital Business Platform."
- <sup>4</sup> See the Forrester report "A Developer's Guide To Forrester's Strategies For API Success."
- <sup>5</sup> Successful delivery of APIs requires AD&D professionals to have the right strategy and the right infrastructure. API gateways and API management solutions are important but not sufficient. As a foundation for crafting a strong API platform strategy, Forrester defines and describes six major elements of a comprehensive API platform, and in an earlier definition of the platform, we covered five major elements. See the Forrester report "Defining A Platform For API Success."
- <sup>6</sup> Forrester's minimum definition of an API management solution includes a requirement that the solution have an API user portal credible for use by external developers. Two vendors that were, on this basis, excluded from this report state that they intend to meet this requirement in the future: Dell Boomi and Nevatech.
- <sup>7</sup> Besides serving customers, there's another category to consider when it comes to software products and services: the developer. Many firms fail to give developers what they need to be successful. One common failing is a poor developer portal. Forrester lays out a 10-step checklist to get your company's direct-to-developer program on the right track. See the Forrester report "Improve Developer Engagement With Online Portals."
- 8 Clients sometimes ask Forrester, "How are enterprises monetizing APIs?" What they're really asking is, "How are enterprises charging for API usage?" This is certainly a useful question, but monetizing APIs is a much bigger concept. See the Forrester report "Monetizing APIs: Help Execs Think Bigger, And Drive More Revenue."
- <sup>9</sup> Platform businesses reshape industries by dramatically improving the economics of integration and service delivery. You can participate in a platform economy by exposing capabilities via APIs and adopting partners' platforms. But to lead, digital business leaders must build services that customers and suppliers embed into their operations. Furthermore, software architecture determines how well a platform business can adapt to the inevitable twists, turns, and surprises it will face. See the Forrester report "Earn Your Place In The Platform Economy" and see the Forrester report "Four Steps For Building A Platform Business."
- <sup>10</sup> As important as API management products are, they address, at most, one-third of what's needed for successfully managing APIs. APIs also need strong life cycles and runtime management: To deliver the right APIs with a high quality of service, AD&D leaders institute a well-managed API delivery life cycle and comprehensive production monitoring and management. See the Forrester report "How To Manage APIs For Customer Engagement."
- <sup>11</sup> API business strategy is commonly a missing element of API strategy. See the Forrester report "Brief: Four Ways APIs Are Changing Your Business" and see the Forrester report "Digitize Your Business Strategy With A Three-Phase Road Map."
- 12 Forrester's model of eight central maturity areas ranging from portfolio management and design strategies to development life cycles and funding serves as a foundation for technology leaders to evolve their organizations' API strategies toward greater business agility and value for money. See the Forrester report "Drive Business Agility And Value By Increasing Your API And SOA Maturity."





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