

KuppingerCole Report

LEADERSHIP COMPASS

by **Alexei Balaganski** | July 2015

API Security Management

This report provides an analysis of the market for API Management solutions with a strong focus on security features. Rapidly growing demand for publishing and consuming APIs, which creates new business models and communication channels, has introduced new security challenges. This Leadership Compass helps you find the best solution that addresses your requirements, while maintaining the highest level of security and threat protection.



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July 2015



Leadership Compass
API Security Management
By KuppingerCole

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Related Research

Leadership Compass: Dynamic Authorization Management - 70966

Leadership Compass: Access Management and Federation - 70790

Advisory Note: The new ABC for IT: Agile Businesses, Connected - 70998

Advisory Note: Connected Enterprise Step-by-step - 70999

Advisory Note: The Open API Economy - 70352

Advisory Note: API Economy Ecosystem - 70625

Advisory Note: Trends in Authentication and Authorization - 71043

Advisory Note: IAM Predictions and Recommendations 2014-2018 - 71120

Product Report: 3Scale API Management - 70626

Product Report: Layer 7 Technologies - 70627

Executive View: Intel Expressway API Manager - 70642

Product Report: CA IdentityMinder™ - 70914

Executive View: IBM SoftLayer – Security and Assurance - 71281

Executive View: Axway API Management for Dynamic Authorization Management (DAM) - 71184

Executive View: WSO2 Identity Server - 71129

1 Management Summary

KuppingerCole has long recognized the API Economy as one of the most important current IT trends. Rapidly growing demand for exposing and consuming APIs, which enables organizations to create new business models and connect with partners and customers, has tipped the industry towards adopting lightweight RESTful APIs, which are commonly used today. Unfortunately, many organizations tend to underestimate the potential security challenges of opening up their APIs without a security strategy and infrastructure in place. Such popular emerging technologies as the Internet of Things (IoT) or Software Defined Computing Infrastructure (SDCI), which rely significantly on API ecosystems, are also bringing new security challenges with them.

Creating a well-planned strategy and reliable infrastructure to expose their business functionality securely to be consumed by partners, customers and developers, is a significant challenge that has to be addressed not just at the gateway level, but along the whole information chain from backend systems to endpoint applications. It is therefore obvious that point solutions addressing specific links in this chain are not viable in the long term, and KuppingerCole's analysis is primarily looking at existing integrated API management solutions, but with a strong focus on security features within these solutions.

This Leadership Compass provides an overview of the market segment of API Management solutions covering a quite broad selection of vendors, from the largest IT corporations - for which API management solutions represent a small part of their product portfolios - to smaller, highly focused companies concentrating on API-related solutions only. Products reviewed in this report range from heavyweight enterprise solutions to small-scale Open Source frameworks. Unfortunately, several of the vendors we had initially contacted have decided not to participate in the rating for various reasons. We are briefly covering their solutions separately in Chapter 14 "Vendors to Watch".

Although the market for API management solutions is relatively new, it has matured very rapidly, and most of the current solutions are already providing comprehensive functionality and robust scalability and performance in the core areas usually expected from these products by customers. In just a few years, APIs have evolved from an obscure technical term reserved for developers into one of the key opportunities for businesses to establish new relationships with partners and customers. Unfortunately, adoption of lightweight RESTful APIs as the de-facto industry standard has only further increased the tendency for many companies to overlook numerous security challenges related to exposing enterprise services beyond the corporate perimeter, such as:

- supporting multiple types of identities, authentication protocols and tokens
- providing dynamic access control that goes beyond static roles
- securing interfaces against hacker attacks and other threats
- preventing sensitive information leaks caused by malicious insiders or software bugs
- Validating information flows for schema violations, weak cryptography, etc.
- addressing government and industry-specific compliance issues
- ensuring continued availability and performance of the services

All of these challenges make the seemingly easy task of publishing a REST API increasingly complex and make the task of selecting the most suitable solution for managing your company's APIs even more important.

This Leadership Compass, therefore, provides a strong focus on security features. We are primarily looking for capabilities in the following areas:

- Service and API Virtualization
- Security and Threat Mitigation
- Identity and Access Control
- Availability and Performance

However, even when analyzing core functional capabilities of API management products like a developer portal or management and analytics, we take security and identity into account. Solutions that are designed with security from the ground up and are capable of integrating security features into every functional aspect are expected to receive more favorable ratings as opposed to products that have security added later or rely on third party integrations.

For more information on some of the identity-related challenges API management solutions have to address, you may refer to other KuppingerCole Leadership Compasses, such as **Access Management and Federation** (published in September 2013) and **Dynamic Authorization Management** (published in June 2014).

Below you will find a short summary of our findings including the diagrams showing vendors' positions on KuppingerCole Leadership scales.

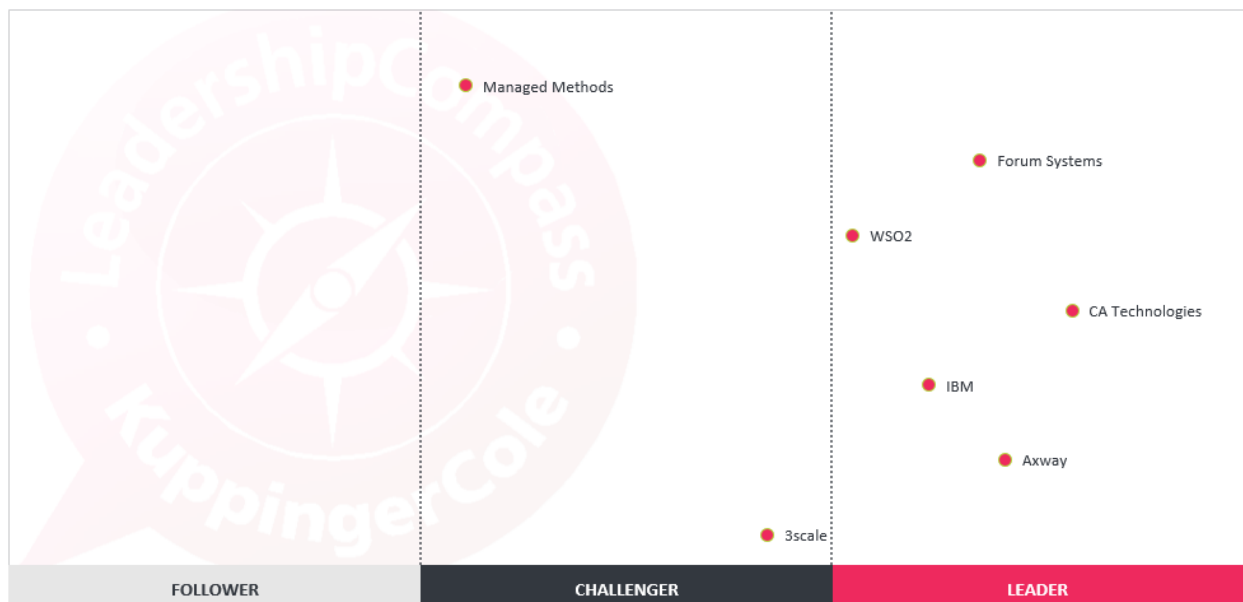


Figure 1: Overall Leaders in the API Security Management market [Note: There is only a horizontal axis. Vendors to the right are positioned better].

In the Overall Leadership rating, we have a compact group of leaders with CA Technologies in the front and Axway close behind. This is completely unsurprising, since both are large and established technology vendors with broad portfolios and strong global market positions. More of a surprise is the strong overall position of Forum Systems, which is a small privately held company, concentrating on API gateway solutions only. However, being the only vendor in our rating with a primary focus on security, it is recognized by KuppingerCole as one of the leading players in the market segment.

IBM, despite the company's strong overall market presence, does not yet have a substantial number of customers in the API management segment; still, it is positioned in the Leader segment as well, followed by WSO2, which has significantly expanded its market presence during the last year.

3scale has stopped just short of entering the Leaders segment. Although KuppingerCole recognizes the company's unique and innovative approach to API management, the fact that the product delegates many of its security features to third parties, as well as 3scale's moderate financial strength prevented the company from joining the ranks of overall leaders.

Quite far behind in the Challenger segment, we can see Managed Methods. Although the company provides a robust and mature product, its focus on security features isn't strong. Further hindered by its relatively small ecosystem and weak financial performance, the company could not score sufficiently high in our overall rating.

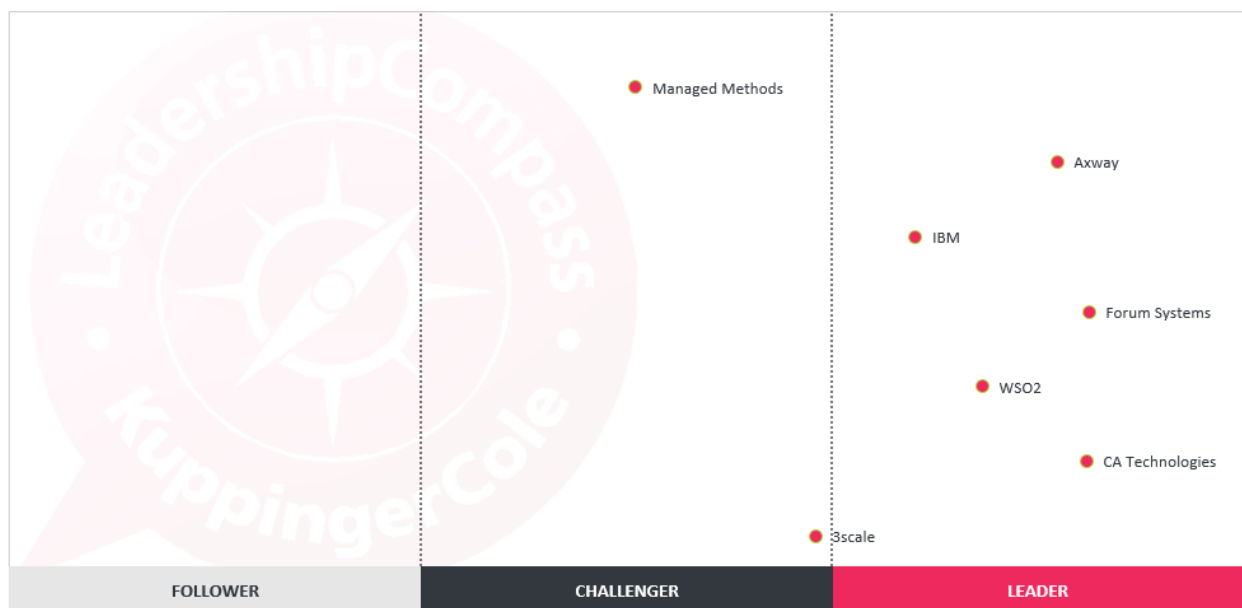


Figure 2: Product Leaders in the API Security Management market [Note: There is only a horizontal axis. Vendors to the right are positioned better].

In the Product Leadership rating, we look specifically for functional strength of the products with a particular focus on security- and identity-related functions. Again, we have a very tight competition with Forum Systems taking the top spot with the only product in our rating built upon the “security by design” principle. CA Technologies follows closely with their integrated solution portfolio built upon the pioneering technology from Layer 7. Axway's product, with its impressive analytics capabilities, takes the third spot. WSO2's solution is especially notable for its flexibility and extensibility, as well as

integration with the company's IAM products. Although IBM's solution, consisting of several individual products, did not get the highest marks on integration and interoperability, it still joins the group of leaders as a strong enterprise-grade B2B platform.

At the very top of the Challenger segment, we again find 3scale. Despite excellent management functionality and strong focus on scalability and ease of use, 3scale's solution just cannot provide the same enterprise-grade security like dedicated API gateways from other vendors.

Managed Methods fares better in security features like content filtering, but their support for strong authentication methods is still somewhat lacking, not to mention limited developer portal functionality and weak integration capabilities.

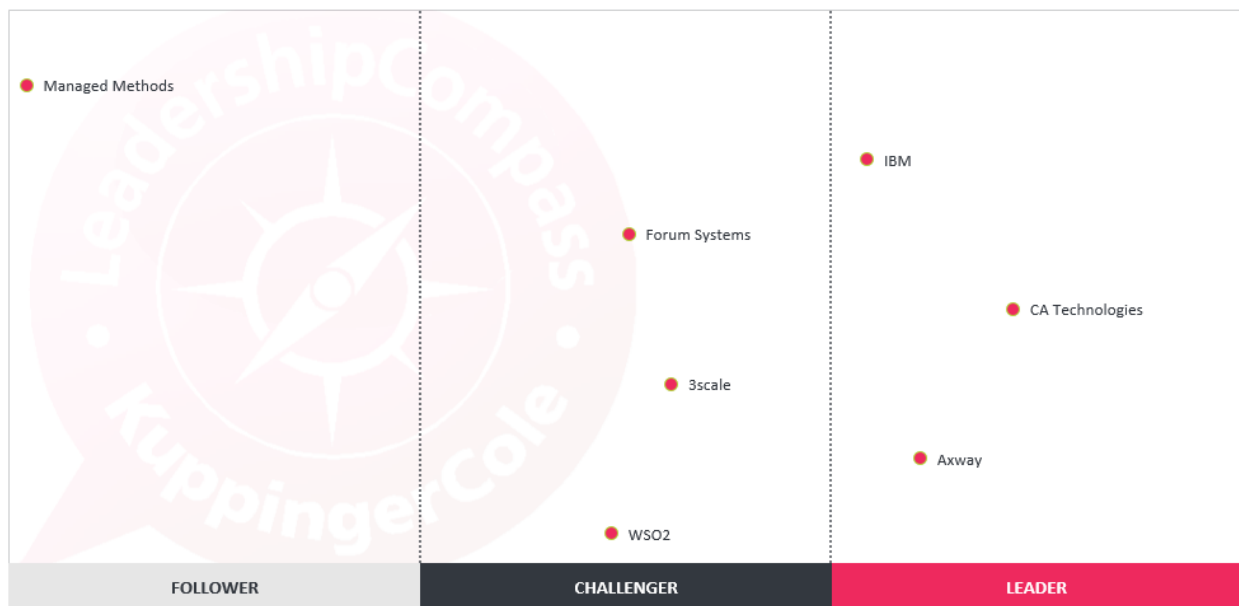


Figure 3: Market Leaders in the API Security Management market [Note: There is only a horizontal axis. Vendors to the right are positioned better].

KuppingerCole's Market Leadership rating is based on the number of customers, strength of partner networks, and global market presence. Unsurprisingly, large global vendors like CA Technologies and Axway lead the rating because of their large partner networks and strong global market positions. Even though IBM is a relative newcomer to the API management market, their huge partner network and growing number of customers allow the company to enter the Leader segment as well.

3scale, while having the largest number of customer deployments among all reviewed vendors, has only a very small number of reseller partners and thus appears in the Challenger segment of our rating. Joining it are Forum Systems, which gets good marks for an impressive list of very large deployments, especially in highly regulated industries and government services, and WSO2 with its strong Open Source community.

Managed Methods is unfortunately staying behind in the Follower segment because of a relatively low number of deployments.

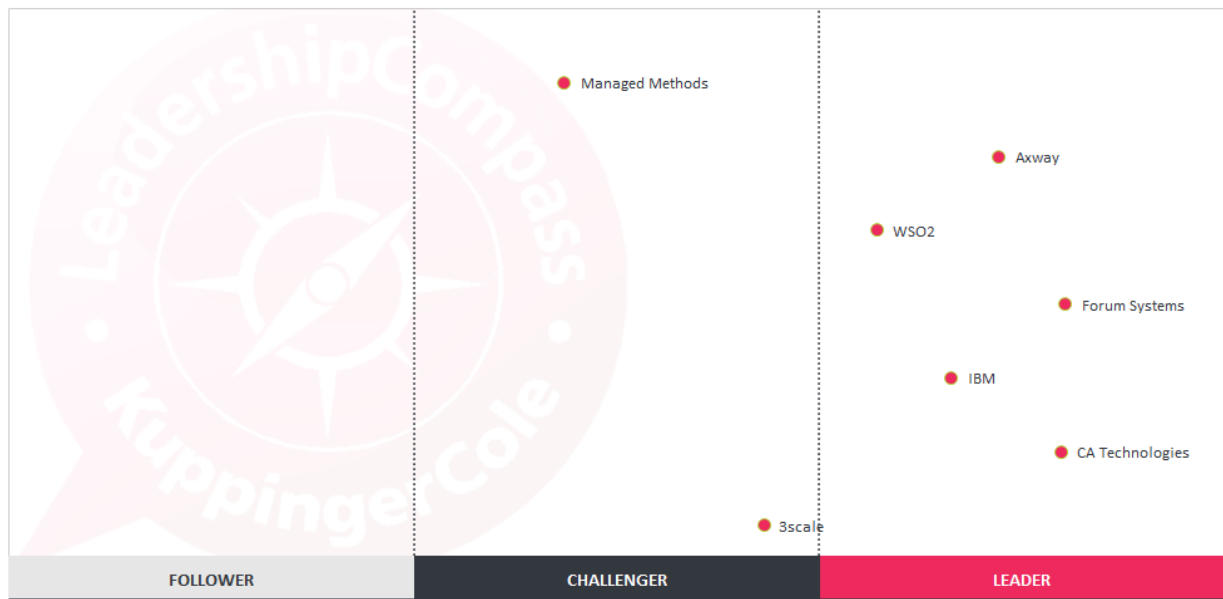


Figure 4: Innovation Leaders in the API Security Management market [Note: There is only a horizontal axis. Vendors to the right are positioned better].

Finally, there is the Innovation Leadership rating, where we are looking specifically at the vendor's ability to deliver new ideas or emerging technologies for the particular market segment. Innovation leaders are shaping the future of the market by coming up with innovative features that will eventually become standard for all their competitors. Again, in this Leadership Compass we are mostly focusing on security and identity-related functionality.

We have positioned Forum Systems on the top spot as the only vendor consistently implementing the "security first" approach in their product. CA Technologies is again following very closely, continuing to innovate with one of the pioneer products in the API management market, followed by Axway with another acquisition (from Vordel). IBM and WSO2 also made into the Leader segment because of multiple advantages of integrating their API management products with dedicated identity and security offerings in their portfolios.

3scale with their unique approach to API management has just stopped short of entering the Leader segment. Unfortunately, with the primary focus of this rating being API security and threat mitigation, this otherwise very innovative solution cannot compete with dedicated security solutions from other vendors. Managed Methods is also appearing in the Challenger segment: although their product provides a robust and comprehensive functionality, they are still catching up on supporting the latest industry standards and protocols.

Please note that these ratings provide just a high-level comparison of the products we have tested. Depending on your specific requirements, vendors generally not recognized as the Leaders may still be the best choice. We recommend that you always perform a thorough product selection and evaluation process for your specific projects.

2 Methodology

This report provides an overview of the market for the API Management solutions, however, a strong focus is made on API security and threat protection features. KuppingerCole strongly believes that designing a well-planned strategy and reliable infrastructure for exposing enterprise services as APIs is impossible without addressing various security challenges including support for various identity types, strong end-to-end communication security and threat protection. All these challenges have to be addressed along the whole information chain from backend systems to endpoint applications. Therefore, in this report we are not looking at various point solutions, but evaluating existing integrated API management solutions with an emphasis on security features.

It should be noted that it is not advisable to pick vendors based only on the information provided within this report. Customers must always define their specific requirements and carefully analyze what they need. This report does not provide any recommendations for picking a vendor for a specific customer scenario. A more thorough and comprehensive analysis of customer requirements and a more detailed mapping of these requirements to product features is always required.

We look at four types of leaders:

- **Product Leaders:** Product Leaders identify the leading-edge products in the particular market segment. These products largely deliver what we expect from products in that market segment. They are mature.
- **Market Leaders:** Market Leaders are vendors that have a large, global customer base and a strong partner network to support their customers. A lack in global presence or breadth of partners can prevent a vendor from becoming a Market Leader.
- **Innovation Leaders:** Innovation Leaders are those vendors that are driving new ideas, devices, or methods in the particular market segment. They provide several of the most innovative and forthcoming features we hope to see in the particular market segment.
- **Overall Leaders:** Overall Leaders are identified based on a combined rating, looking at the strength of products, the market presence, and the innovation of vendors. Overall Leaders might have slight weaknesses in some areas but become an Overall Leader by being above average in all areas.

For every area, we distinguish between three levels of products:

- **Leaders:** This identifies the Leaders as defined above. Leaders are products which are exceptionally strong in particular areas.
- **Challengers:** This level identifies products that are not yet Leaders but have specific strengths, which might make them Leaders. Typically, these products are also mature and might be leading edge when looking at specific use cases and customer requirements.
- **Followers:** This group contains products that lag behind in some areas, such as having a limited feature set or only a regional presence. The best of these products might have specific strengths, making them a good or even best choice for specific use cases and customer requirements but are of limited value in other situations.

In addition, we have defined a series of tables which

- Compare, for instance, the rating for innovation with the one for the overall product capabilities, thus identifying highly innovative vendors, which are taking a slightly different path from established vendors, but also established vendors, which no longer lead in innovation. These tables provide additional viewpoints on the vendors and should be considered when picking vendors for RFIs (Request for Information), long lists, etc. in the vendor/product selection process.
- Add additional views by comparing the product rating to other feature areas. This is important because not all customers need the same product, depending on their current situation and specific requirements. Based on these additional matrices, customers can evaluate which vendor fits best to their current needs but also is promising regarding its overall capabilities. The latter is important given that a product typically not only should address a pressing challenge, but become a sustainable solution. It is a question of helping now, but also of being good enough for the next steps and future requirements. Here these additional matrices come into play.

Thus, the KuppingerCole Leadership Compass provides a multi-dimensional view of vendors and their products.

Our rating is based on a broad range of input and a long experience in that market segment. Input consists of experience from KuppingerCole advisory projects, feedback from customers using the products, product documentation, a questionnaire sent out before creating this report, and other sources.

3 Product Rating

KuppingerCole as an analyst company regularly performs evaluations of products/services and vendors. The results are, among other types of publications and services, published in the KuppingerCole Leadership Compass Reports, KuppingerCole Product Reports, and KuppingerCole Vendor Reports. KuppingerCole uses a standardized rating to provide a quick overview of our perception of the products/services or vendors. Providing a quick overview of the KuppingerCole rating of products requires an approach combining clarity, accuracy, and completeness of information at a glance. KuppingerCole uses the following categories to rate products/services:

- Security
- Integration
- Usability
- Functionality
- Interoperability

Security – Information Security is a key element and requirement in the KuppingerCole IT Model (#70129 Scenario Understanding IT Service and Security Management). Thus, providing a mature approach to security and having well-defined internal security concepts are key factors we look for when evaluating products/services. In this report, a special emphasis is placed not just on security-related features in the products; we consider solutions that have been designed with security in mind from the very beginning to be superior to those products where security features have been added as an afterthought.

Functionality – this is measured in relation to three factors. One is what the vendor promises to deliver. The second is the status of the industry. The third factor is what KuppingerCole would expect the industry to deliver to meet customer requirements. In mature market segments, the status of the industry and KuppingerCole expectations usually are virtually the same. In emerging markets, they might differ significantly, with no single vendor meeting the expectations of KuppingerCole, thus leading to relatively low ratings for all products in that market segment. Not providing what customers can expect on average from vendors in a market segment usually leads to a degradation of the rating, unless the product provides other features or uses another approach that appears to provide customer benefits.

Since the market for API management solutions is quite mature and established, the “traditional” API management functionality available from almost any vendor taken into account did not have significant influence on our ratings. However, various identity-, security-, availability- and threat protection-related functions have been carefully considered.

Integration – integration is measured by the degree to which the vendor has integrated the individual technologies or products/services in the portfolio. Thus, when we use the term integration, we are referring to the extent in which products/services interoperate with themselves. This detail can be uncovered by looking at what an administrator is required to do in the deployment, operation, management and discontinuation of the product/service. The degree of integration is then directly related to how much overhead this process requires. For this particular report, we have looked for possible integrations with the vendors’ own IAM solutions, strong authentication frameworks and the like.

Interoperability – interoperability also can have many meanings. We use the term “interoperability” to refer to the ability of a product/service to work with other vendors’ products/services, standards, or technologies. In this context it means the degree to which the vendor has integrated the individual products/services or technologies with other products or standards that are important outside of the product/service family. Extensibility is part of this and measured by the degree to which a vendor allows its technologies and products to be extended for the purposes of its constituents. We think extensibility is so important that it is given equal status to ensure its importance and understanding by both the vendor and the customer. As we move forward, just providing good documentation is inadequate. We are moving to an era when acceptable extensibility will require programmatic access through a well-documented and secure set of APIs. Refer to the Open API Economy Document (#70352 Advisory Note: The Open API Economy) for more information about the nature and state of extensibility and interoperability. Naturally, this is especially important for API management solutions themselves. For this report, we are looking for support of various API protocols and legacy systems, as well as integrations with different user directories, strong authentication providers, SIEM products, etc.

Usability – usability refers to the degree to which the vendor enables the accessibility to its technologies and products/services to its constituencies. This typically addresses two aspects of usability – the end user view and the administrator view. Sometimes just good documentation can create adequate accessibility. However, overall we have strong expectations regarding well-integrated user interfaces and a high degree of consistency across user interfaces of a product or different products/services of a vendor. We also expect vendors to follow common, established approaches to user interface design.

We focus on security, functionality, integration, interoperability, and usability for the following key reasons:

- Increased People Participation – Human participation in systems at any level is the highest area of cost and potential breakdown for any IT endeavor.
- Lack of Security, Functionality, Integration, Interoperability, and Usability – Lack of excellence in any of these areas will only result in increased human participation in deploying and maintaining IT systems.
- Increased Identity and Security Exposure to Failure – Increased People Participation and Lack of Security, Functionality, Integration, Interoperability, and Usability not only significantly increase costs, but inevitably lead to mistakes and breakdowns. This will create openings for attack and failure.

Thus, when KuppingerCole evaluates a set of technologies or products/services from a given vendor, the degree of product Security, Functionality, Integration, Interoperability, and Usability that the vendor has provided is of highest importance. This is because lack of excellence in any or all of these areas will inevitably lead to identity and security breakdowns and weak infrastructure.

4 Vendor Rating

For vendors, additional ratings are used as part of the vendor evaluation. The specific areas we rate for vendors are:

- Innovation
- Market position
- Financial strength
- Ecosystem

Innovation – this is measured as the capability to drive innovation in a direction which aligns with the KuppingerCole understanding of the particular market segment(s) the vendor is in. Innovation has no value by itself but needs to provide clear benefits to the customer. However, being innovative is an important factor for trust in vendors, because innovative vendors are more likely to remain leading edge. An important element of this dimension of the KuppingerCole ratings is the support of standardization initiatives if applicable. Driving innovation without standardization frequently leads to lock-in scenarios. Thus, active participation in standardization initiatives adds to the positive rating of innovativeness.

Market position – measures the position the vendor has in the market or the relevant market segments. This is an average rating over all markets in which a vendor is active, e.g. being weak in one segment doesn't lead to a very low overall rating. This factor takes into account the vendor's presence in major markets. Again, while being part of the vendor rating, this mainly looks at the market position in the particular market segment, so a very large vendor may not necessarily be a market leader in this particular report.

Financial strength – although KuppingerCole doesn't consider size to be a value by itself, financial strength is an important factor for customers when making decisions. In general, publicly available financial information is an important factor therein. Companies that are financed by venture capital are in general more likely to become an acquisition target, with massive risks for the execution of the vendor's roadmap.

Ecosystem – this dimension looks at the ecosystem for a particular product covered in this report. It focuses mainly on the partner base of a vendor and the approach the vendor takes to act as a "good citizen" in heterogeneous IT environments. Although definitely not a universal criterion, in the API management market segment, we consider active contributions to the Open Source community or even releasing the product under an open source license an important factor for maintaining a large and healthy ecosystem.

Again, please note that in KuppingerCole Leadership Compass reports, most of these ratings apply to the specific product and market segment covered in the analysis, not to the overall rating of a vendor.

5 Vendor Coverage

KuppingerCole tries to include all vendors within a specific market segment in their documents. The scope of the document is global coverage, including vendors which are only active in regional markets, particularly in North America.

However, there might be vendors, which don't appear in this document for various reasons:

- **Limited market visibility:** There might be vendors and products/services, which are not on our radar yet, despite our continuous market research and work with advisory customers. This usually is a clear indicator of a lack in Market Leadership.
- **Denial of participation:** Vendors might decide on not participating in our evaluation and refuse to become part of the Compass document. KuppingerCole may include their products anyway as long as sufficient information for evaluation is available, thus providing a comprehensive overview of leaders in the particular market segment.
- **Lack of information supply:** Products of vendors that don't provide the information we have requested for the report will not appear in the document unless we have access to sufficient information from other sources.
- **Borderline classification:** Some products might have only a small overlap with the market segment we are analyzing. In these cases, we might decide not to include the product in that KuppingerCole report.

The target is providing a comprehensive view of the products/services in a market segment. KuppingerCole will provide regular updates on their documents.

For this KuppingerCole Leadership Compass, we have a selection of vendors ranging from large global players to smaller companies specializing in API Management solutions only, with both commercial and open source products present in the analysis. However, several major vendors have decided not to

participate in the rating for various reasons. We will provide a concise overview of their offerings in a separate chapter.

6 Market Segment

This Leadership Compass provides an overview of the market segment of API Management solutions covering a quite broad selection of vendors, from the largest IT corporations, for which API management solutions represent a small part of their product portfolios to smaller, highly focused companies concentrating on API-related solutions only. Products reviewed in this report range from heavyweight enterprise solutions to small-scale Open Source frameworks.

The market for API management solutions is currently showing a strong tendency towards consolidation, with several smaller vendors recently being acquired by large IT corporations, integrating API gateway functionality into their portfolios. These include Vordel, purchased by Axway in 2012, and Layer 7, acquired by CA Technologies in 2013. Although this strategy usually provides much larger exposure for the product through the new owner's global partner network, this can also have negative impact on innovation. An example of a vendor resisting this trend is Forum Systems, which instead is focusing on a single, constantly evolving product. Another important aspect of the API management market is the strong presence of the Open Source community, with several notable products released under OSS licenses. WSO2 is an example of such vendor taking part in our rating.

Although the market for API management solutions is relatively new, it has matured very rapidly, and most of the current solutions are already providing comprehensive functionality and robust scalability and performance in the core areas usually expected from these products by customers. In just a few years, APIs have evolved from an obscure technical term reserved for developers into one of the key opportunities for businesses to establish new relationships with partners and customers. Mobile applications and cloud services have become major channels for business transactions, and emerging technologies like the Internet of Things (IoT) or Software Defined Computing Infrastructure (SDCI) clearly indicate the enormous scale of challenges that businesses have to address, if they want to become a part of the global API economy.

Unfortunately, adoption of lightweight RESTful APIs as the de-facto industry standard has only further increased the tendency for many companies to overlook numerous security challenges related to exposing enterprise services beyond the corporate perimeter, such as:

- supporting multiple types of identities, authentication protocols and tokens
- providing dynamic access control that goes beyond static roles
- securing interfaces against hacker attacks and other threats
- addressing government and industry-specific compliance issues
- ensuring continued availability and performance of the services

All these challenges make the seemingly easy task of publishing a REST API increasingly complex and make the task of selecting the most suitable solution for managing your company's APIs even more important.

This Leadership Compass therefore provides a strong focus on security features. We are looking for capabilities in the following areas:

- Service and API Virtualization
- Security and Threat Mitigation
- Identity and Access Control
- Deployment and Integration
- Developer Portal
- Management and Analytics
- Scalability and Performance
- Interoperability and Ecosystem

Again, it is worth stressing that we take security and identity into account for all key functional areas of a typical API management product. Solutions that are designed with security from the ground up and are capable of integrating security features into every functional aspect are expected to receive more favorable ratings as opposed to products that have security added later or rely on third party integrations.

7 Specific Features Analyzed

When evaluating the API management solutions in this Leadership Compass, besides looking at the general aspects such as

- overall functionality
- size of the company and size of development team
- number and geographical distribution of customers
- partner ecosystem
- licensing models

we have considered eight key functional areas specific to this particular market segment:

Service and API Virtualization	Exposing legacy enterprise services beyond the corporate perimeter requires on-the-fly conversion of API standards and transport protocols, as well as the ability to combine several physical services into a single one, limit access to certain methods, etc.
Security and Threat Mitigation	Securing APIs and services from hacker attacks and other threats requires a multilayered approach to address both transport-level attacks and exploits specific to messaging protocols and data formats.
Identity and Access Control	Supporting multiple identity types, standards, protocols and tokens and providing flexible dynamic access control that is capable of making runtime context-based decisions.
Deployment and Integration	Depending on specific project requirements, both on-premise and cloud deployments must be supported, as well as hybrid configurations. Degree of integration with other vendor's products, especially IAM solutions strongly influences the solution's extensibility and ease of deployment.
Developer Portal	To make APIs successful, onboarding, engagement and management of developers is critical. Flexible tiered access, strong authentication and automated provisioning are among the functions we were looking for.

Management and Analytics	Comprehensive analytics and reporting are important not just for API monetization, but for auditing and compliance as well.
Scalability and Performance	Maintaining continuous availability of the enterprise services even under high load or a denial-of-service attack is the most crucial requirement for an API infrastructure.
Interoperability and Ecosystem	Integrations with 3 rd party SIEM tools, GRC identity providers and other products are crucial as well. Naturally, an API management solution also needs to provide its own set of APIs.

We have also looked at specific USPs (Unique Selling Propositions) and innovative features of products that distinguish them from other offerings available in the market.

8 Market Leaders

The market leaders we have identified during our evaluation of the API Security Management market are shown in Fig. 5 below.

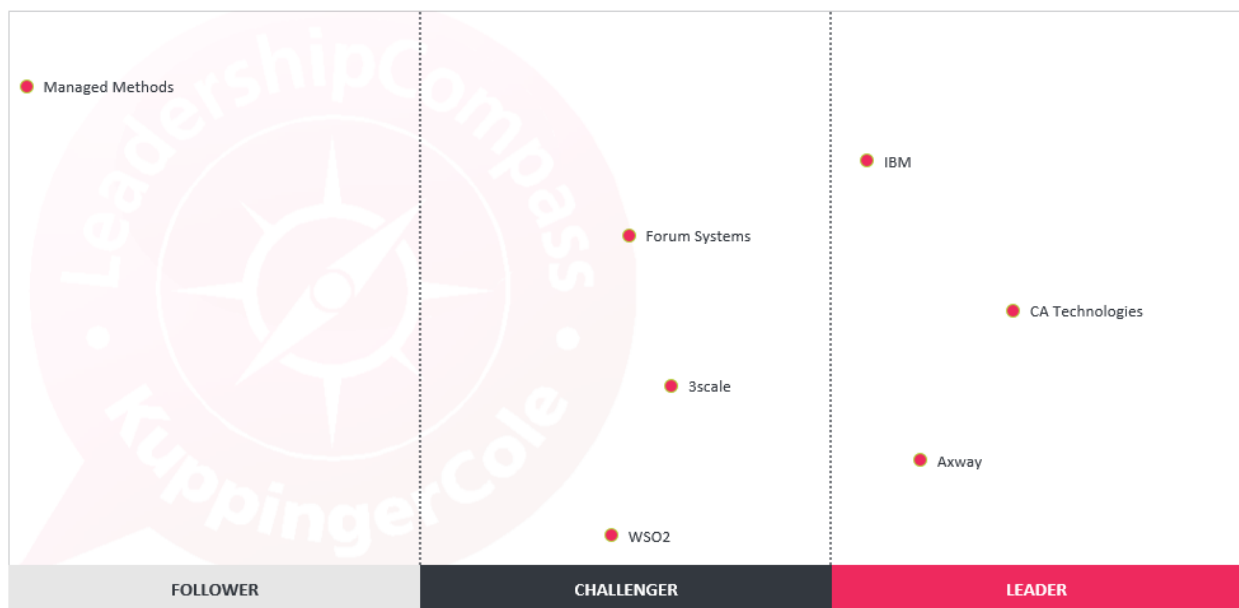


Figure 5: Market Leaders in the API Security Management market

KuppingerCole's Market Leadership rating is based on the number of customers, strength of partner networks, and global market presence. Unsurprisingly, large global vendors like CA Technologies and Axway lead the rating because of their large partner networks and strong global market positions.

Even though IBM is a relative newcomer to the API management market, their huge partner network and growing number of customers allow the company to enter the Leader segment as well.

3scale, while having the largest number of customer deployments among all reviewed vendors, has only a very small number of reseller partners and thus appears in the Challenger segment of our rating.

Joining it are Forum Systems, which gets good marks for an impressive list of very large deployments, especially in highly regulated industries and government services, and WSO2 with its strong Open Source community.

Managed Methods is unfortunately staying behind in the Follower segment because of a relatively low number of deployments.

Market Leaders (in alphabetical order):

- Axway
- CA Technologies
- IBM

9 Product leaders

The second view we provide concerns Product Leadership. This view is mainly based on the analysis of product/service features and the overall capabilities of the various products/services.

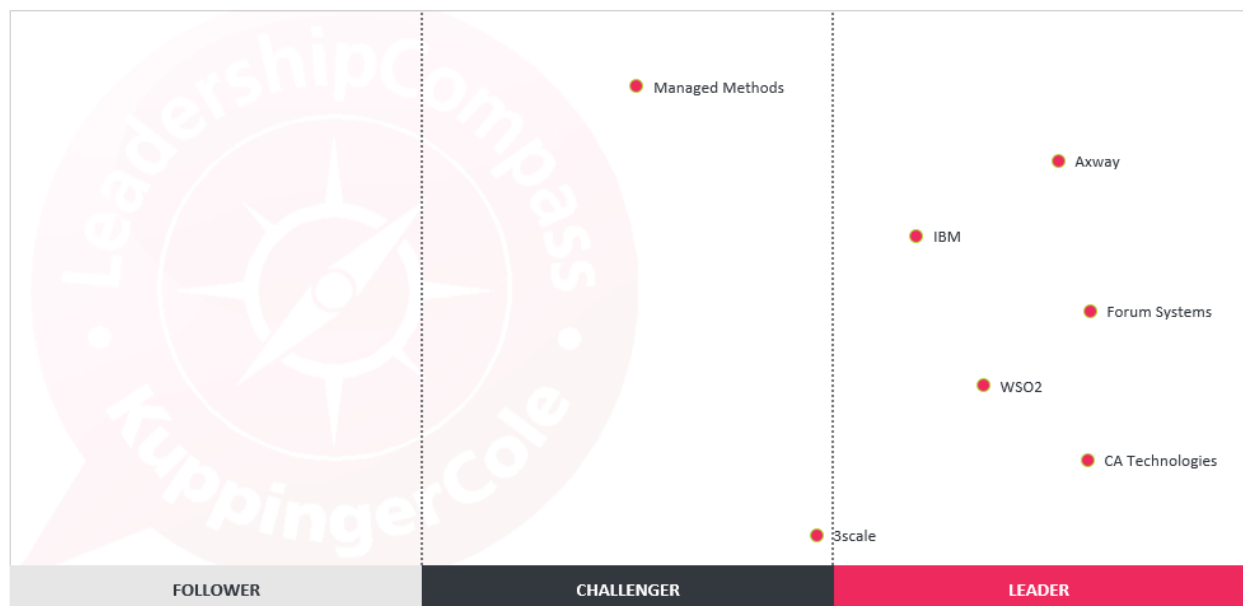


Figure 6: Product Leaders in the API Security Management market

In the Product Leadership rating, we look specifically for functional strength of the products with a particular focus on security- and identity-related functions. Again, we have a very tight competition with Forum Systems taking the top spot with the only product in our rating built upon the “security by design” principle.

CA Technologies follows closely with their integrated solution portfolio built upon the pioneering technology from Layer 7.

Axway’s product, with its impressive analytics capabilities, takes the third spot. WSO2’s solution is especially notable for its flexibility and extensibility, as well as integration with the company’s IAM products.

Although IBM’s solution, consisting of several individual products, did not get the highest marks on integration and interoperability, it still joins the group of leaders as a strong enterprise-grade B2B platform.

At the very top of the Challenger segment, we again find 3scale. Despite excellent management functionality and strong focus on scalability and ease of use, 3scale's solution just cannot provide the same enterprise-grade security like dedicated API gateways from other vendors.

Managed Methods fares better in security features like content filtering, but their support for strong authentication methods is still somewhat lacking, not to mention limited developer portal functionality and weak integration capabilities.

Product Leaders (in alphabetical order):

- Axway
- CA Technologies
- Forum Systems
- IBM
- WSO2

10 Innovation Leaders

The third angle we take when evaluating products/services concerns innovation. Innovation is, from our perspective, a key capability in IT market segments. Innovation is what customers require from vendors to continue to provide new functionality to meet their evolving requirements. Hence, an analysis of a vendor's record of innovation is often as important as the current features of their product/service.

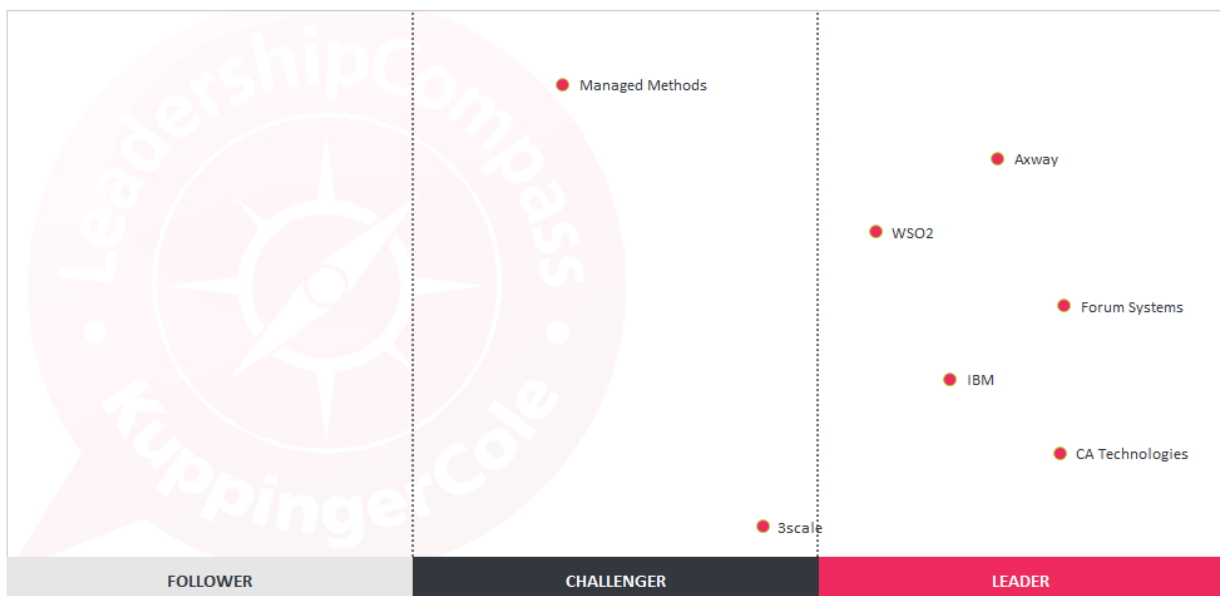


Figure 7: Innovation Leaders in the API Security Management market

We have positioned Forum Systems on the top spot as the only vendor consistently implementing the "security first" approach in their product.

CA Technologies is again following very closely, continuing to innovate with one of the pioneer products in the API management market, followed by Axway with another acquisition (from Vordel).

IBM and WSO2 also made into the Leader segment because of multiple advantages of integrating their API management products with dedicated identity and security offerings in their portfolios.

3scale with their unique approach to API management has just stopped short of entering the Leader segment. Unfortunately, with the primary focus of this rating being API security and threat mitigation,

this otherwise very innovative solution cannot compete with dedicated security solutions from other vendors.

Managed Methods is also appearing in the Challenger segment: although their product provides a robust and comprehensive functionality, they are still catching up on supporting the latest industry standards and protocols.

Innovation Leaders (in alphabetical order):

- Axway
- CA Technologies
- Forum Systems
- IBM
- WSO2

11 Product Evaluation

This section contains a quick rating for every product we have included in this report. For some of the products, there are additional KuppingerCole Reports available, providing detailed information.

In addition to the standard information we provide on the vendors and their products in other KuppingerCole Leadership Compass documents, for each evaluated product we include a spider graph indicating the strength in the eight dimensions we have outlined earlier. Each axis of the graph shows how good the product performs in the given functional area, such as Security and Threat Mitigation, Identity and Access Control, or Service and API Virtualization.

In the following analysis, we have provided our ratings for the products and vendors in a series of tables. These ratings represent the aspects described previously in this document. Here is an explanation of the ratings that we have used:

- **Strong Positive:** this rating indicates that, according to our analysis, the product or vendor significantly exceeds the average for the market and our expectations for that aspect.
- **Positive:** this rating indicates that, according to our analysis, the product or vendor exceeds the average for the market and our expectations for that aspect.
- **Neutral:** this rating indicates that, according to our analysis, the product or vendor is average for the market and our expectations for that aspect.
- **Weak:** this rating indicates that, according to our analysis, the product or vendor is less than the average for the market and our expectations in that aspect.
- **Critical:** this is a special rating with a meaning that is explained where it is used. For example, it may mean that there is a lack of information. Where this rating is given, it is important that a customer considering this product look for more information about the aspect.

It is important to emphasize that these ratings are not absolute. They are relative to the market and our expectations. Therefore, a product with a strong positive rating could still be lacking in functionality that a customer may need if the market in general is weak in that area. Equally, in a strong market a product with a relatively weak rating may still provide enough functionality to address all specific customer's needs.

11.1 3scale

3scale is a privately held internet technology company based in San Francisco, California, USA. Founded in 2007, it brought its first API management product to the market in 2009. 3scale cloud-based API Management platform is designed with ease and flexibility in mind and provides all necessary means to open, distribute, and monetize APIs.

Strengths/Opportunities	Weaknesses/Threats
<ul style="list-style-type: none"> Well-integrated native cloud platform with complete separation of management and traffic control layers Superior scalability and performance Strong ecosystem based on partnerships with leading technology providers Focus on ease of use and short deployment times, developer flexibility 	<ul style="list-style-type: none"> No support for entirely on-premise deployment maybe a blocker for some customers because of privacy or compliance requirements Key security functions delegated to third parties Small reseller network, poor visibility outside of US and European markets

Table 1: 3scale Strengths and Weaknesses

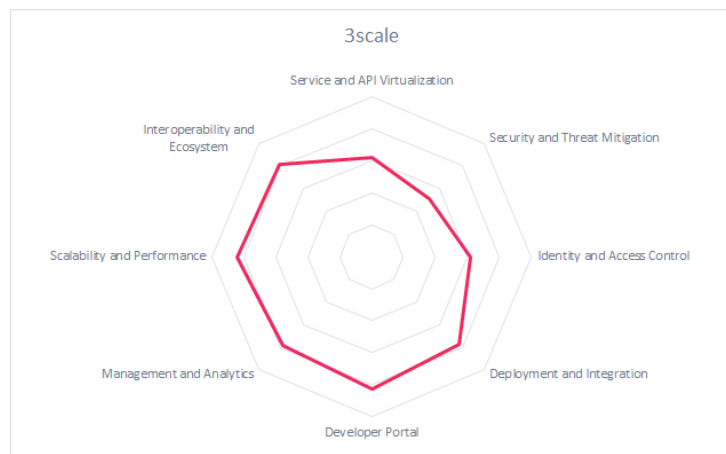
3scale provides a radically different approach to implementing API management infrastructures. The company provides a managed cloud-based platform for management, analytics, monetization, and developer support functions, which is completely decoupled from the API delivery layer, which is implemented via integrations with technology partners like cloud infrastructure providers or content delivery networks. This approach ensures superior scalability and performance, as well as unmatched developer flexibility, since the solution is able to work without an API gateway at all.

Security	positive
Functionality	positive
Integration	strong positive
Interoperability	positive
Usability	strong positive

Table 2: 3scale Rating

3scale's solution is the ideal choice for companies looking for ease of use, short deployment times and flexible cost control. With the same cloud-based management tools,

customers are free to choose any suitable API delivery method for their requirements. In many cases, however, such hybrid architecture is unable to match the grade of protection and compliance specialized enterprise-grade on-premise solutions from other vendors can provide.



11.2 Axway

Axway, founded in 2001, is a global software company headquartered in Phoenix, Arizona, USA. The company offers a broad portfolio of solutions for securing organizations' protected resources and extending their operations into the cloud. With the acquisition of Vordel in 2012, Axway has become one of the leaders in the API Management market by integrating their technology into Axway 5 Suite.

Strengths/Opportunities	Weaknesses/Threats
<ul style="list-style-type: none"> Extremely broad and detailed analytics integrated across other Axway's products Comprehensive and extensible tools for policy management; GUI-based Policy Studio is included 	<ul style="list-style-type: none"> No built-in support for strong authentication, relies on 3rd party integrations

Table 3: Axway Strengths and Weaknesses

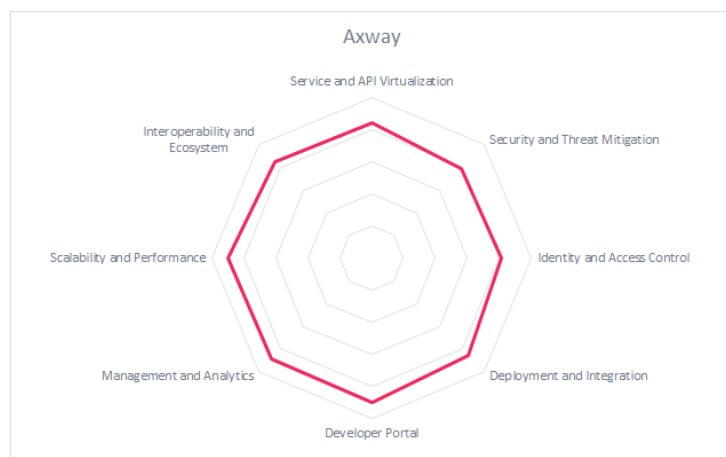
Axway provides a complete API management suite consisting of API Gateway, API Manager, and API Portal. The most notable feature of Axway's solution is extremely broad set of analytics integrated across API, Data Flow and Operational Intelligence platforms, providing insights into each transaction or process. Other major USPs include very strong integration with other Axway B2B, MFT and integration products and solutions, as well as comprehensive policy management capabilities. In the latest release the company has significantly improved security features by incorporating a number of threat mitigation techniques and supporting all modern authentication standards.

Security	strong positive
Functionality	strong positive
Integration	strong positive
Interoperability	strong positive
Usability	strong positive

Table 4: Axway Rating

By integrating proven technology from Vordel into their Suite, Axway provides a comprehensive API management and security solution, which leaves little to be desired (the

most relevant shortcoming in the context of this report is probably lack of built-in strong authentication). Backed by a global market presence and a strong partner network, this makes Axway a strong contender for many organizations looking for an enterprise-grade solution.



11.3 CA Technologies

CA Technologies is a multinational publicly held software company headquartered in New York, USA. Founded in 1976 to develop and sell mainframe software, over the decades CA Technologies has grown significantly via a series of strategic acquisitions. CA Technologies is a major player in the B2B segment, offering a wide range of products and services for mainframe, cloud and mobile platforms. After acquiring Layer 7 in 2013, the company is now a leading player in the API Management market as well.

Strengths/Opportunities	Weaknesses/Threats
<ul style="list-style-type: none"> Comprehensive platform for integrating legacy services, cloud orchestration and mobile optimization Support for wide range of identity standards and protocols Flexible deployment options 	<ul style="list-style-type: none"> Functionality to address compliance issues is not yet sufficiently developed

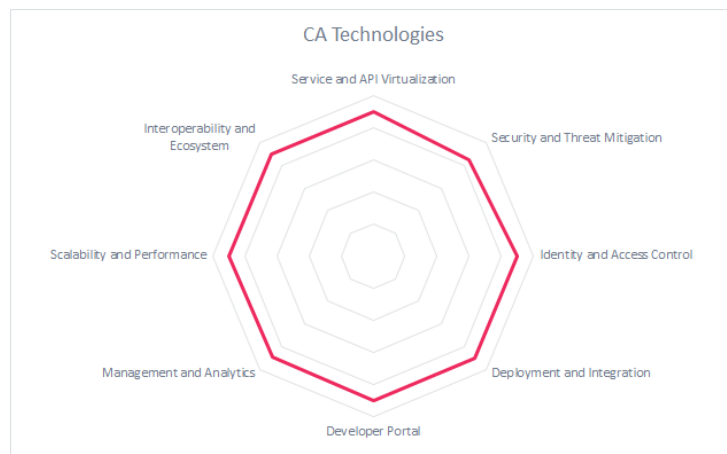
Table 5: CA Technologies Strengths and Weaknesses

By acquiring Layer 7, a pioneering developer in API management, and building on their already strong offering, CA Technologies has attained the pole position among competitors in the market segment. The company's API management portfolio includes several specialized API gateways, API Service Manager, CA API Developer Portal and an Enterprise Service Manager. Traditionally for CA Technologies, all components are tightly integrated, both together and with other products from the company's portfolio. A strong focus on various identity types ensures support for complex integration scenarios, including legacy, cloud and mobile services.

Security	strong positive
Functionality	strong positive
Integration	strong positive
Interoperability	strong positive
Usability	strong positive

Table 6: CA Technologies Rating

CA API Management portfolio provides a complete solution for practically all API management scenarios imaginable, while ensuring a high degree of integration and one of the best implementations of API security and identity features. By combining the pioneering technology with strong global market presence, CA Technologies can definitely be recognized as the leading contender for most organizations.



11.4 Forum Systems

Forum Systems is a privately held independent engineering company based in Newton, Massachusetts, USA. Founded in 2001, the company provides gateway-based solutions for API and cloud security. Since the very beginning, the company has focused on mission-critical large-scale solutions with a heavy emphasis on “security by design”. The company’s flagship product is Forum Sentry API Gateway.

Strengths/Opportunities	Weaknesses/Threats
<ul style="list-style-type: none"> Unified solution for API and service security, access management and threat protection “Security by design” architecture for maximum reliability; FIPS 140-2 and NIAP NDPP-certified Supports a broad range of identity and access control standards, tokens, and credentials 	<ul style="list-style-type: none"> Relatively small partner network limits company’s presence outside of North American and European markets Design decision not to allow 3rd party extensions for the purpose of system integrity may be considered an obstacle for certain projects

Table 7: Forum Systems Strengths and Weaknesses

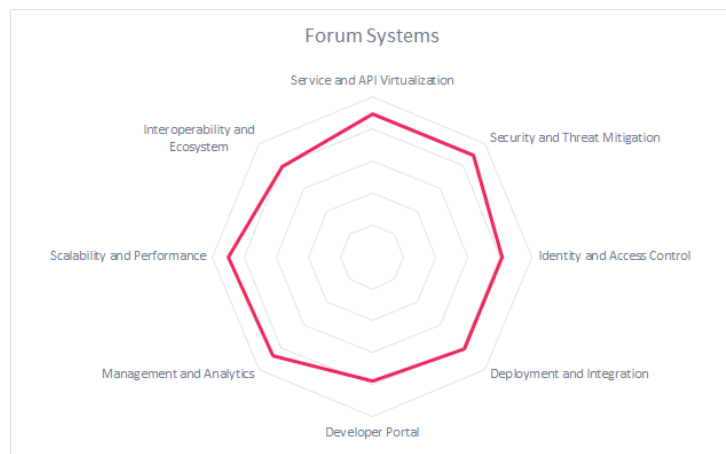
Forum Sentry API Gateway is the only product on the market where security forms an integral foundation of the architecture and was not added later as an afterthought. Delivered as a hardened locked-down appliance, it’s the only product in the market which is FIPS 140-2 and NIAP NDPP-certified. The solution is unique in its approach towards security by not allowing any third party extensions or libraries, which ensures resilience against known and not yet discovered vulnerabilities.

Security	strong positive
Functionality	strong positive
Integration	strong positive
Interoperability	strong positive
Usability	strong positive

Table 8: Forum Systems Rating

We recommend Forum Systems for evaluation by any organization looking for the highest grade of security and reliability for their API management infrastructure. By

concentrating on a single technology solution, the company is able to deliver a highly integrated cutting edge product backed up by an excellent support service.



11.5 IBM

IBM is a multinational technology and consulting company headquartered in Armonk, New York, USA. In over 100 years of its history, the company has grown into one of the largest IT vendors in the world. Although IBM has a long history in cloud services and XML gateways, its API management solution is a relative newcomer in the market, only being available since 2012.

Strengths/Opportunities	Weaknesses/Threats
<ul style="list-style-type: none"> Powerful enterprise-grade solution for B2B scenarios Hardware-accelerated gateway for strong performance and security 	<ul style="list-style-type: none"> Individual components must be deployed separately Features like mobile management or billing are not included

Table 9: IBM Strengths and Weaknesses

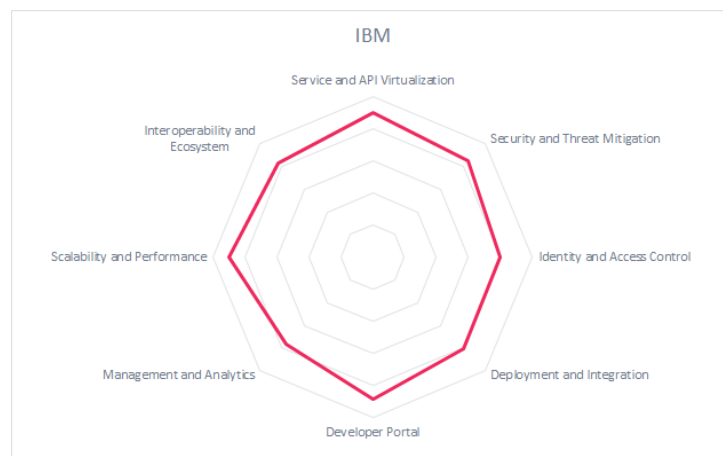
IBM offers API Management solutions for both on-premise and SaaS deployments with the ability to move APIs between on-premise and cloud promoted as a USP. The core component of the solution is the DataPower Gateway, available as a physical or virtual appliance. It provides extensive support for various API protocols and standards, ensuring high performance and strong threat protection. Support for different identity types is somewhat limited, but all major standards are supported. By integrating with IBM Security Access Manager, advanced authentication and access control capabilities can be enforced.

Security	strong positive
Functionality	strong positive
Integration	positive
Interoperability	positive
Usability	strong positive

Table 10: IBM Rating

Despite IBM's generally strong global market presence, its market share in the API Management segment is not yet on par with other leading vendors covered in this

report. This, combined with the necessity to deploy multiple products, has influenced IBM's overall rating negatively. Still, their solution can be strongly recommended for companies looking for powerful B2B solutions, especially if they are already using other IBM products.



11.6 Managed Methods

Managed Methods is a small privately held software company based in Boulder, Colorado, USA. The company was founded in 2013 with a mission to develop easy and efficient cloud security solutions. Managed Methods' portfolio includes products for Cloud Discovery and Cloud Access Risk Evaluation, as well as a Cloud Security Gateway

Strengths/Opportunities	Weaknesses/Threats
<ul style="list-style-type: none"> • Scope extends beyond API management, covers SaaS application security • Comprehensive content routing and filtering functionality • Focus on simplicity and total cost of implementation 	<ul style="list-style-type: none"> • Very limited developer portal functionality • Relies on third party providers for strong authentication

Table 11: Managed Methods Strengths and Weaknesses

The scope of Managed Methods' Cloud Security Gateway goes beyond traditional API management, focusing more on securing and monitoring existing interfaces of SaaS applications used by organizations.

The product delivers comprehensive support for various API protocols and standards, ensuring high performance and good protection against attacks. Reporting and analytics capabilities are excellent. However, it provides support only for major identity federation protocols and relies on third party providers for strong authentication. Developer portal functionality is very limited as well.

Security	positive
Functionality	positive
Integration	neutral
Interoperability	neutral
Usability	positive

Table 12: Managed Methods Rating

Overall, we cannot recommend Managed Methods as a vendor for implementing a full-scale API Management strategy. However, many organizations may be interested in a point solution with a strong focus on simplicity and total cost of implementation, especially those trying to address their "Shadow IT" issues.



11.7 WSO2

WSO2 is a global application development company based in the US, UK and Sri Lanka. Founded in 2005, the company is the only Open Source vendor in our rating. The company's approach to defining its portfolio is quite unorthodox: they can quickly build new products by assembling existing platform components. Thus, WSO2's API management solution consists of a substantial number of products like API Manager, Event Processor, Business Activity Monitor, etc., which can be combined according to customer requirements or replaced when extended functionality is needed later.

Strengths/Opportunities	Weaknesses/Threats
<ul style="list-style-type: none"> Built on an integrated extensible platform for business-centric solutions Flexible deployment options Can be adapted to most complex customer requirements 	<ul style="list-style-type: none"> Advanced authentication and access control require integration with other WSO2 products Threat prevention functionality is limited Developer portal lacks automation features

Table 13: WSO2 Strengths and Weaknesses

WSO2 API Management platform provides a complete stack of products including an API gateway, a developer portal, key management, analytics, monitoring and so on. The core platform supports a basic set of identity and threat protection functions, but by integrating with WSO2 Identity Server, the platform support for various federation protocols and methods of strong authentication can be greatly extended. Similarly, the flexibility of the platform enables different customizations to address most complex deployment scenarios.

Security	strong positive
Functionality	positive
Integration	strong positive
Interoperability	strong positive
Usability	strong positive

Table 14: WSO2 Rating

Although WSO2's API solution is quite functional out-of-the-box, it's the platform's flexibility that makes it ideal for projects where API management is a part of a bigger

infrastructure and customizability is an important requirement. And, of course, WSO2's solution based on Open Source provides the lowest total cost of implementation.



12 Products at a Glance

This section provides an overview of the various products we have analyzed. As well as the rating overview, we provide additional comparisons that put Product Leadership, Innovation Leadership, and Market Leadership in relation to each other. These help to identify, for instance, highly innovative but specialized vendors or local players that provide strong product features but do not yet have a global presence and large customer base.

12.1 Ratings at a glance

Based on our evaluation, a comparative overview of the ratings of all the products covered in this document is shown in the table below:

Product	Security	Functionality	Integration	Interoperability	Usability
3scale	positive	positive	strong positive	positive	strong positive
Axway	strong positive	strong positive	strong positive	strong positive	strong positive
CA Technologies	strong positive	strong positive	strong positive	strong positive	strong positive
Forum Systems	strong positive	strong positive	strong positive	strong positive	strong positive
IBM	strong positive	strong positive	positive	positive	strong positive
Managed Methods	positive	positive	neutral	neutral	positive
WSO2	strong positive	positive	strong positive	strong positive	strong positive

Table 15: Comparative overview of the ratings for the product capabilities

In addition, we also provide four additional ratings for the vendor. These go beyond the product view provided in the previous section. While the rating for Financial Strength applies to the vendor, the other ratings apply to the product.

Vendor	Innovativeness	Market Position	Financial Strength	Ecosystem
3scale	positive	positive	positive	strong positive
Axway	strong positive	strong positive	strong positive	strong positive
CA Technologies	strong positive	strong positive	strong positive	strong positive
Forum Systems	strong positive	positive	positive	positive
IBM	strong positive	positive	strong positive	strong positive
Managed Methods	neutral	neutral	weak	weak
WSO2	positive	positive	neutral	positive

Table 16: Comparative overview of the ratings for the vendors

In the area of Innovativeness, we were looking for the product to provide a range of advanced security- and identity-related features in our analysis. If the product provides just a few or none of these features, we recognize the vendor as weak or critical.

For Market Position, we are looking at the visibility of the vendor in the market. This is indicated by factors including the presence of the vendor in all major geographical markets and the number of customers using the product. If a vendor has limited presence outside of a few regional markets, it receives a weak rating.

In the area of Financial Strength, a weak or critical rating means there is a lack of information about financial strength. This does not imply that the vendor is in a weak or a critical financial situation. This is not meant to be an in-depth financial analysis of the vendor.

Finally, a critical rating regarding Ecosystem applies to vendors which do not have, or have a very limited, ecosystem with respect to numbers of partners and their regional presence. That might be company policy, to protect their own consulting and system integration business. However, our strong belief is that the success and growth of companies in a market segment relies on strong partnerships.

12.2 The Market/Product Matrix

Furthermore, we have compared the position of vendors regarding combinations of our three major areas of analysis, i.e. market leadership, product leadership, and innovation leadership. This analysis provides additional information.

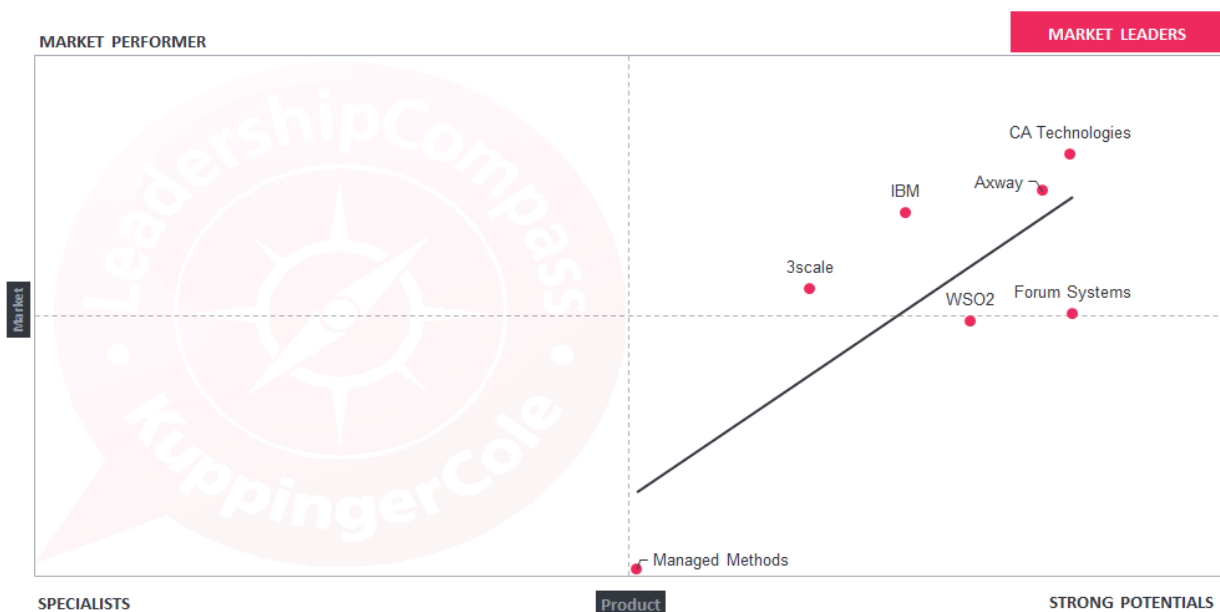


Figure 8: The Market/Product Matrix. Vendors below the line have a weaker market position than expected according to their product maturity. Vendors above the line are sort of “over-performers” when comparing Market Leadership and Product Leadership.

In this comparison, it becomes clear which vendors are better positioned in our analysis of Product Leadership compared to their position in the Market Leadership analysis. Vendors above the line are sort of “over-performing” in the market. It comes as no surprise that these are mainly the very large vendors, while vendors above the line frequently are innovative but focused on specific regions.

We have defined four segments of vendors to help in classifying them:

- Market Leaders:** This segment contains vendors which have a strong position in our categories of Product Leadership and Market Leadership. These vendors have an overall strong to excellent position in the market.
- Strong Potentials:** This segment includes vendors which have strong products, ranked high in our Product Leadership evaluation. However, their market position is not as good. That might be because of various reasons, like a regional focus by the vendors or the fact that they are niche vendors in that particular market segment.
- Market Performers:** Here we find vendors which have a stronger position in Market Leadership than in Product Leadership. Typically, such vendors have a strong established customer base due to other market segments they are active in.
- Specialists:** In this segment we typically find specialized vendors that have – in most cases – specific strengths but neither provide full coverage of all features that are common in the particular market segment nor count among the software vendors with overall very large portfolios.

In the Market Leaders quadrant, one can clearly observe CA Technologies and Axway dominating the ratings both in product and market leadership. IBM's position above the line signifies their strong market position, while their product functionality still needs a bit of polishing. Position of Forum Systems, on the other hand, shows outstanding product capabilities, but their limited partner network does not yet allow them to win a better market position. 3scale, despite having the largest number of customers, isn't positioned higher in the Leaders quadrant because of their weak partner network.

WSO2, despite their strong product capabilities and significant growth in the last year, is yet to reach a position among leaders. For the moment, it's positioned in the Strong Potentials quadrant. Managed Methods, with their weak market share, still manages to remain in the quadrant as well.

12.3 The Product/Innovation Matrix

This view shows how Product Leadership and Innovation Leadership are correlated. It is not surprising that there is a pretty good correlation between the two views. Most vendors are close to the line showing a balanced ratio of product capabilities and innovation.

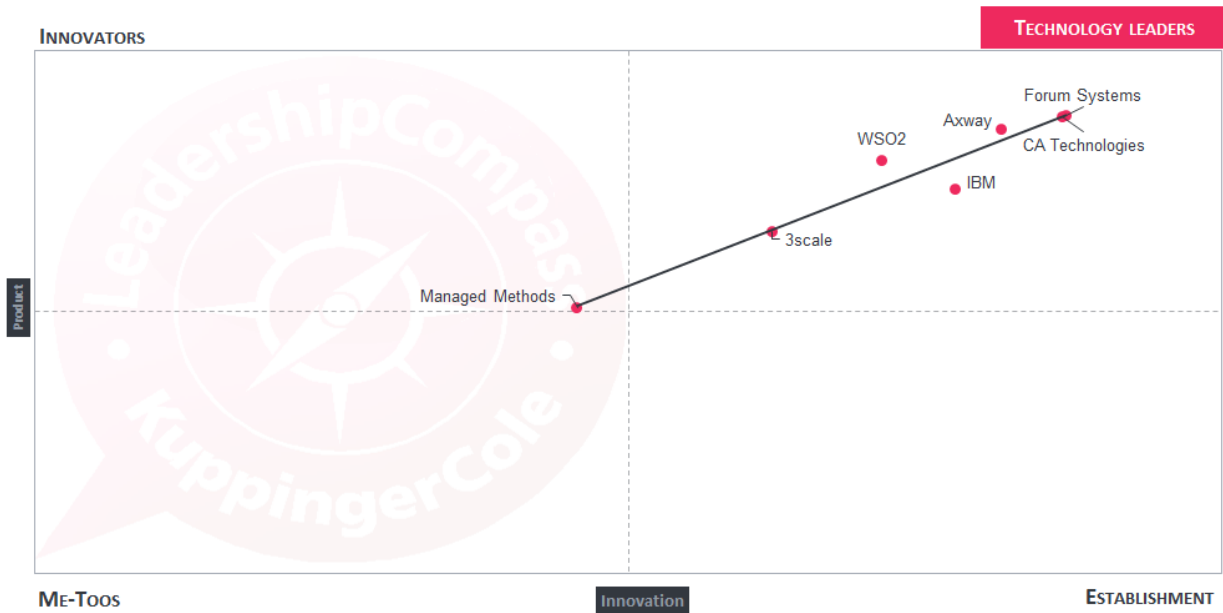


Figure 9: The Product/Innovation Matrix. Vendors below the line are less innovative, vendors above the line are, compared to the current Product Leadership positioning, more innovative.

Again, we've defined four segments of vendors. These are

- Technology Leaders:** This group contains vendors which have technologies which are strong regarding their existing functionality and which show a good degree of innovation.
- Establishment:** In this segment we typically find vendors that have a relatively good position in the market but don't perform as strong when it comes to innovation. However, there are exceptions if vendors take a different path and focus on innovations we do not consider important for this market segment and thus do not count that strong for the Innovation Leadership rating.
- Innovators:** Here we find highly innovative vendors with a limited visibility in the market. It is always worth having a look at this segment because vendors therein might be a fit especially for specific customer requirements.
- Me-toos:** This segment mainly contains those vendors that are following the market. There are exceptions in the case of vendors that take a fundamentally different approach to provide specialized point solutions. However, in most cases this is more about delivering what others have already created.

This diagram clearly shows that the majority of vendors in our rating are delivering feature-rich solutions and still continuing to innovate without slowing down. This type of distribution, where all points are close to the median line, is typical for mature established markets.

In the Technology Leaders quadrant we can observe CA Technologies and Forum Systems in the lead, with Axway, IBM and WSO2 following closely. 3scale has also entered the Leaders quadrant with their unique approach to API management.

Managed Methods, while offering a robust set of API management functionality, does not seem to be focused on innovation as much as other vendors and therefore lands in the Establishment quadrant.

12.4 The Innovation/Market Matrix

The third matrix shows how Innovation Leadership and Market Leadership are related. Some vendors might perform well in the market without being Innovation Leaders. This might impose a risk for their future position in the market, depending on how they improve their Innovation Leadership position. On the other hand, vendors that are highly innovative have a good chance for improving their market position but might also fail, especially in the case of smaller vendors.

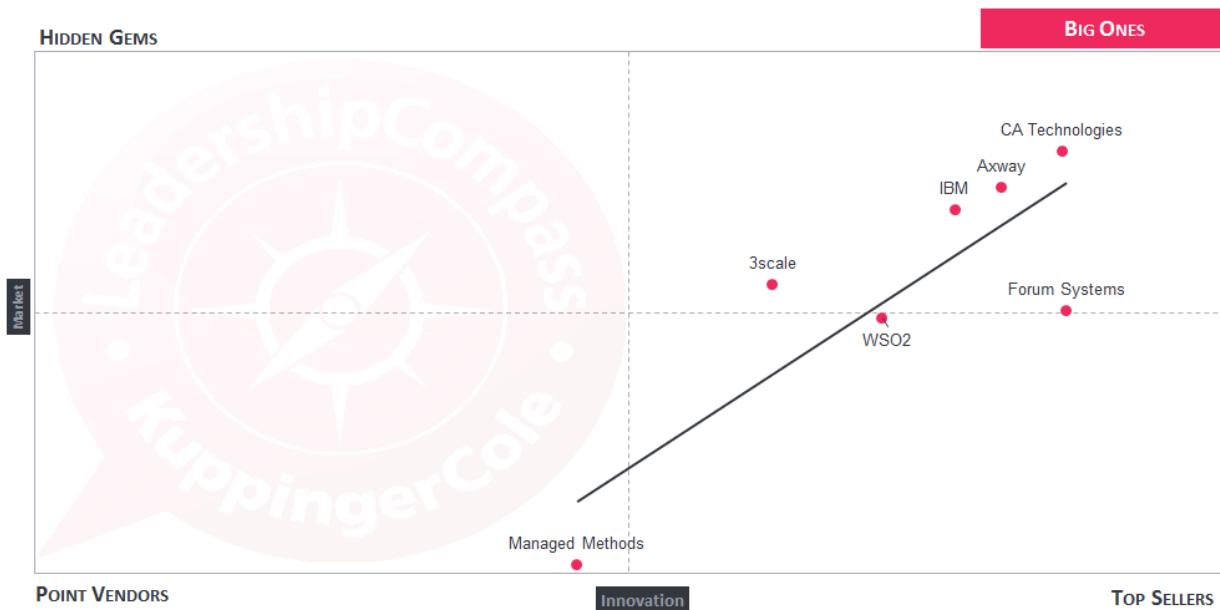


Figure 10: The Innovation/Market Matrix. Vendors below the line are performing well in the market compared to their relative weak position in the Innovation Leadership rating, while vendors above the line show based on their ability to innovate, the biggest potential to improve their market position

The four segments we have defined here are

- Big Ones:** These are market-leading vendors with a good to strong position in Innovation Leadership. This segment mainly includes large software vendors.
- Top Sellers:** In this segment we find vendors that have an excellent market position compared to their ranking in the Innovation Leadership rating. That can be caused by a strong sales force or by selling to a specific community of “customer customers”, i.e. a loyal and powerful group of contacts in the customer organizations.
- Hidden Gems:** Here we find vendors which are more innovative than would be expected given their Market Leadership rating. These vendors have a strong potential for growth, however they also might fail in delivering on that potential. Nevertheless, this group is always worth a look due to their specific position in the market.
- Point Vendors:** In this segment we find vendors which typically have point solutions or target specific groups of customers with solutions focused on these, but not necessarily covering all requirements of all types of customers and thus not being among the Innovation Leaders. These vendors might be attractive if their solutions fit the specific customer requirements.

In this diagram we can clearly see that a vendor's ability to innovate does not necessary translate into a good market position. Larger vendors like Axway, CA Technologies and IBM have a substantial advantage here, thanks to their large partner networks and large customer bases.

Unsurprisingly, the big three vendors have landed in the Big Ones quadrant, and their position above the median line indicates that they are “over-performing” on the market, just like 3scale. Forum Systems, however, while having a very strong innovation rating, is positioned dangerously close to the lower border of the quadrant.

WSO2 has a good potential to enter the Big Ones club in the future, but for now it falls just short of it, remaining in the Hidden Gems quadrant.

Managed Methods and 3scale can be seen in the Point Vendors quadrant, since their products are targeted for specific customer groups and do not cover all types of requirements for API security management solutions.

13 Overall Leadership

Finally, we've put together Market, Product, and Innovation Leaders and created an Overall Leadership rating shown on the diagram below.

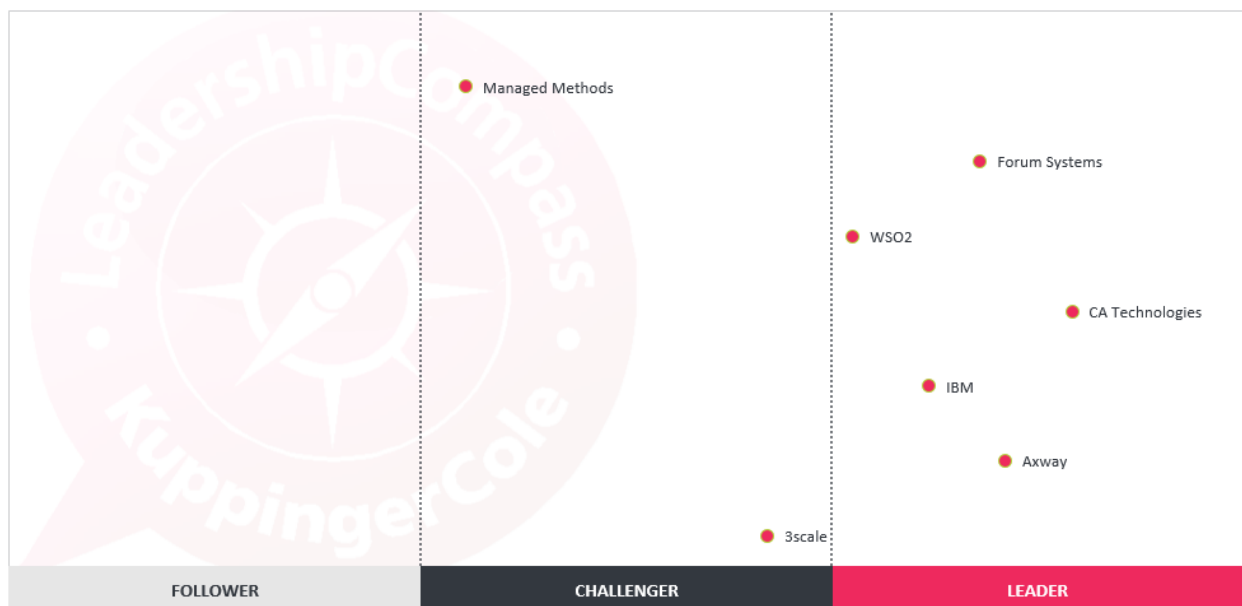


Figure 11: The Overall Leadership rating for the API Security Management market

In the Overall Leadership rating, we have a compact group of leaders with CA Technologies in the front and Axway close behind. This is completely unsurprising, since both are large and established technology vendors with broad portfolios and strong global market positions. More of a surprise is the strong overall position of Forum Systems, which is a small privately held company, concentrating on API gateway solutions only. However, being the only vendor in our rating with a primary focus on security, it is recognized by KuppingerCole as one of the leading players in the market segment.

IBM, despite the company's strong overall market presence, does not yet have a substantial number of customers in the API management segment; still, it is positioned in the Leader segment as well, followed by WSO2, which has significantly expanded its market presence during the last year.

3scale has stopped just short of entering the Leaders segment. Although KuppingerCole recognizes the company's unique and innovative approach to API management, the fact that the product delegates many of its security features to third parties, as well as 3scale's moderate financial strength prevented the company from joining the ranks of overall leaders.

Quite far behind in the Challenger segment, we can see Managed Methods. Although the company provides a robust and mature product, its focus on security features isn't strong. Further hindered by its relatively small ecosystem and weak financial performance, the company could not score sufficiently high in our overall rating.

Overall leaders (in alphabetical order):

- Axway
- CA Technologies
- Forum Systems
- IBM
- WSO2

14 Vendors to Watch

In addition to the vendors evaluated in this Leadership Compass, there are a number of companies that decided not to participate in the rating for various reasons. In this chapter we provide a short overview of these vendors and their solutions.

14.1 Intel Mashery

Intel Corporation is a multinational technology company headquartered in Santa Clara, California, USA. Founded in 1968 as a semiconductor chip manufacturer, the company has grown into one of the world's largest manufacturers of computing hardware.

In 2013, Intel entered the API Management market by acquiring Mashery, the company that supposedly invented the concept of API management. While not yet integrated into Intel's software portfolio, Mashery's SaaS-based API management solution provides a comprehensive set of products for implementing an API strategy, including Developer Portal, API Management Console and Proxy, and API Measurement and Reporting.

API proxy supports a reasonable number of identity functions as well as threat protection, but clearly the primary focus of Intel's offer is on ease of deployment and supporting an active developer community.

14.2 Apigee

Apigee is a privately held company based in San Jose, California, USA. Founded in 2004, the company focuses exclusively on API management and analytics solutions.

Apigee's flagship product is Apigee Edge – a cloud-based platform for designing, managing and analyzing APIs. It comprises a set of API Services: for managing, securing and extending APIs with additional backend functionality; Analytics Services for collecting, analyzing and reporting on various technical, operational and billing statistics; and Developer Services for building a community around APIs.

While Apigee's analytics can be considered the best among competitors, the security and identity capabilities are quite average, relying heavily on pluggable external providers.

14.3 Akana (SOA Software)

Akana, Inc, known until recently as SOA Software, is a veteran player in the API management market. Founded in 2001, it initially focused on web services and SOA before gradually expanding their scope towards API security and cloud integration.

Akana provides a number of products for various aspects of API management, including an API Gateway for managing and securing APIs, a Community Manager for engaging developers and other partners, and a Lifecycle Manager enabling coordination between developers and business teams by providing governance, analytics and automation tools.

Akana's API Gateway incorporates an impressive amount of transport and message security as well as threat protection features, and supports a wide array of authentication standards and tokens.

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