REPORT
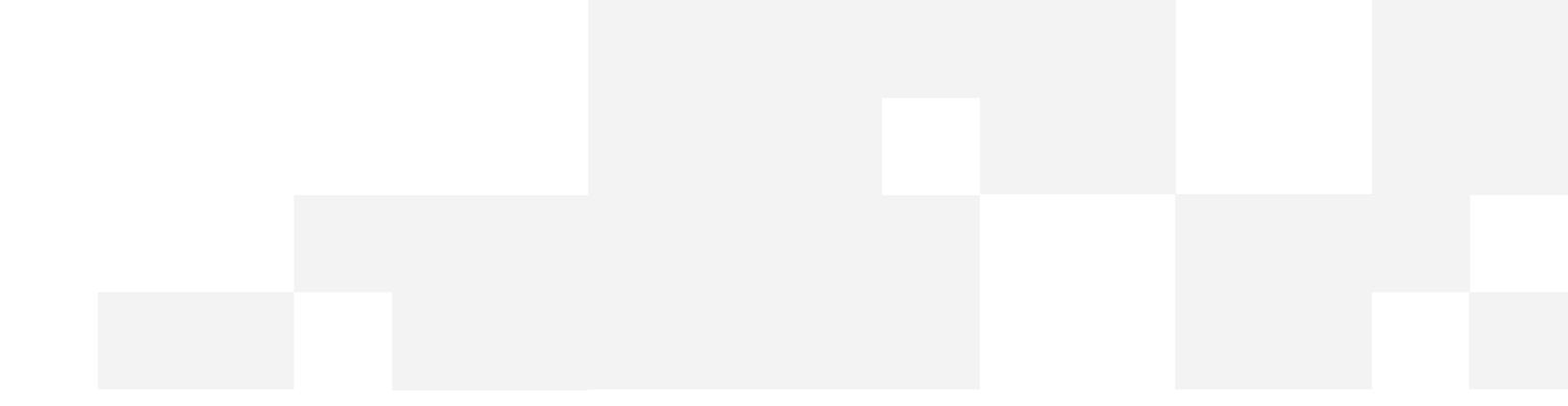
API complexity is real, growing, and holding enterprises back

800 IT and business leaders weigh in on how they're managing the challenges of an increasingly complex API landscape

API complexity: dawn of a new era

APIs (application program interfaces) are a game-changing digital technology that allows all types of disparate applications around the globe to communicate with each other through a range of devices over a cloud or on-premises IT infrastructure. As the key connective ingredient in smart phones, banking apps, healthcare devices, retail centers, and just about any modern digital ecosystem, APIs have transformed the way people and businesses interact with their technology and the world around them.

But for the unsung heroes who have made developing and managing APIs their daily life, it's not all pie-in-the-sky. For them, and the lines of business leaders they serve, the proliferation and continuous evolution of API technology has ushered in a challenging new era: that of API complexity.

API complexity derives from many factors: various business units building their own APIs, multiple API gateways from multiple solution providers, and unmanaged APIs roaming wild, to name a few. Moving forward, the biggest determinant separating tomorrow's haves from the have-nots will likely come down to how well companies master the complexities of their API and IT landscapes. Which enterprises will succeed? Which ones will be held back? What about yours?

The 4 key findings of our API complexity survey

In a quest for answers, Axway partnered with enterprise technology market research experts, Vanson Bourne, to survey 800 senior IT and business decision-makers in the U.S., U.K., France, Germany, Australia, and Singapore. The key takeaways were eye-opening:

01 API complexity is growing

Today, the average enterprise uses three different API management vendors. This will grow by 33 percent to an average of four by 2023. Enterprises in the U.S. and Singapore will see five different vendors on average in two years' time.

02 API complexity is holding enterprises back

API complexity negatively impacts the bottom line, delaying the launch of new digital projects and offerings, and raising numerous challenges and pain points – from security to governance to innovation and many others.

03 Enterprises mastering API complexity get ahead

API-first enterprises and enterprises that have mastered API complexity are moving ahead quickly. Those that build new APIs rapidly, reuse APIs, or speed up the partner onboarding process, tend to launch more new digital projects and offerings annually than laggards.

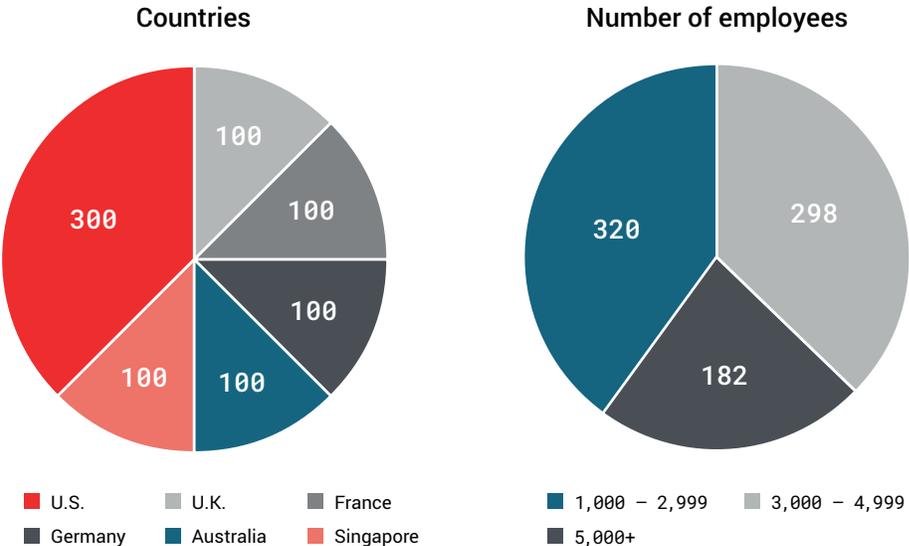### 04 Not all enterprises know how to master complexity

Enterprises want to move ahead but many don't know how to. This is further complicated by the fact that some current API management vendors don't offer capabilities such as multi-vendor management or platform/ standard openness.

This report dives deeper into the survey's key findings complete with graphical metrics that offer comparative results. Our goal is to equip IT and business leaders with useful knowledge that will help their teams and companies forge ahead in a profoundly dynamic API landscape.
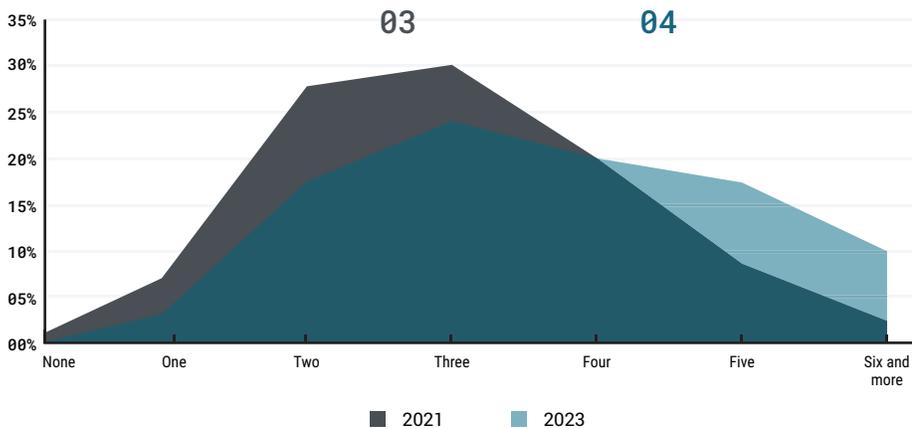
Demographic overview

Throughout May and June, 2021, Vanson Bourne, sponsored by Axway, carried out a global survey looking into API complexity and related trends. The survey included 800 line-of-business and IT decision-makers categorized by country, enterprise size (number of employees), and industry.
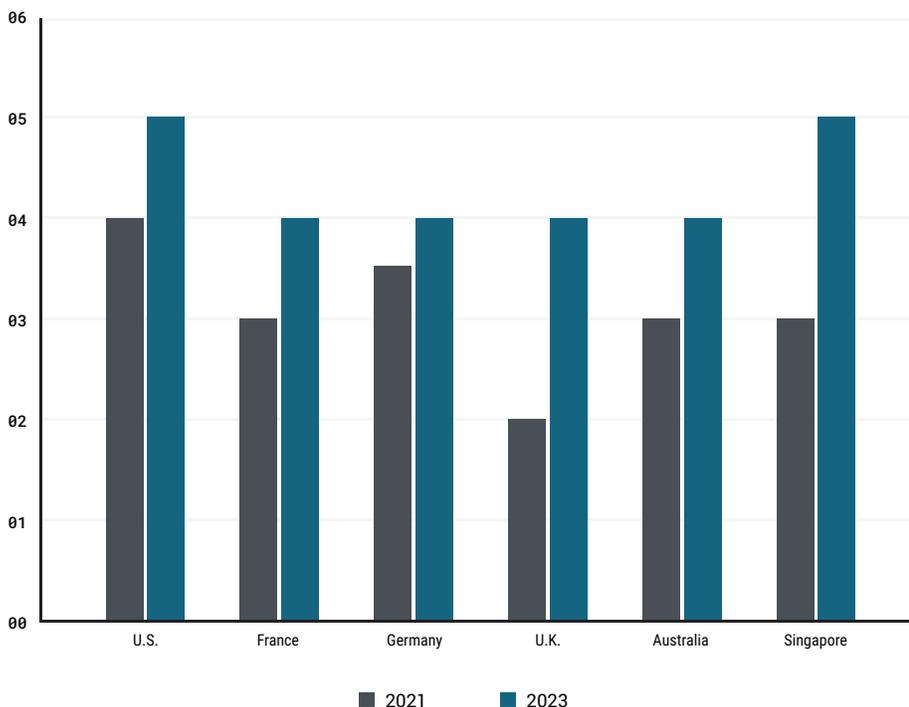
Countries

- 300 — U.S.
- 100 — U.K.
- 100 — France
- 100 — Germany
- 100 — Australia
- 100 — Singapore

Legend: ■ U.S. ■ U.K. ■ France ■ Germany ■ Australia ■ Singapore

Number of employees

- 320 — 1,000 – 2,999
- 298 — 3,000 – 4,999
- 182 — 5,000+

Legend: ■ 1,000 – 2,999 ■ 3,000 – 4,999 ■ 5,000+

Industry

Industry	Value
Banking, financial, insurance, securities	239
Healthcare (private or public)	178
Business and professional services	70
Retail/wholesale	61
Manufacturing	57
Media and telecommunications	49
Transportation	45
Public sectors and government organizations	42
Resource industries	30
Other	29

01 API complexity is growing

Average number of API management vendors: overall

03   04

Legend: 2021, 2023

The average enterprise uses, or expects to use when adopted, three different API management vendors in 2021. This will grow to four by 2023 – an increase of 33% in just two years.
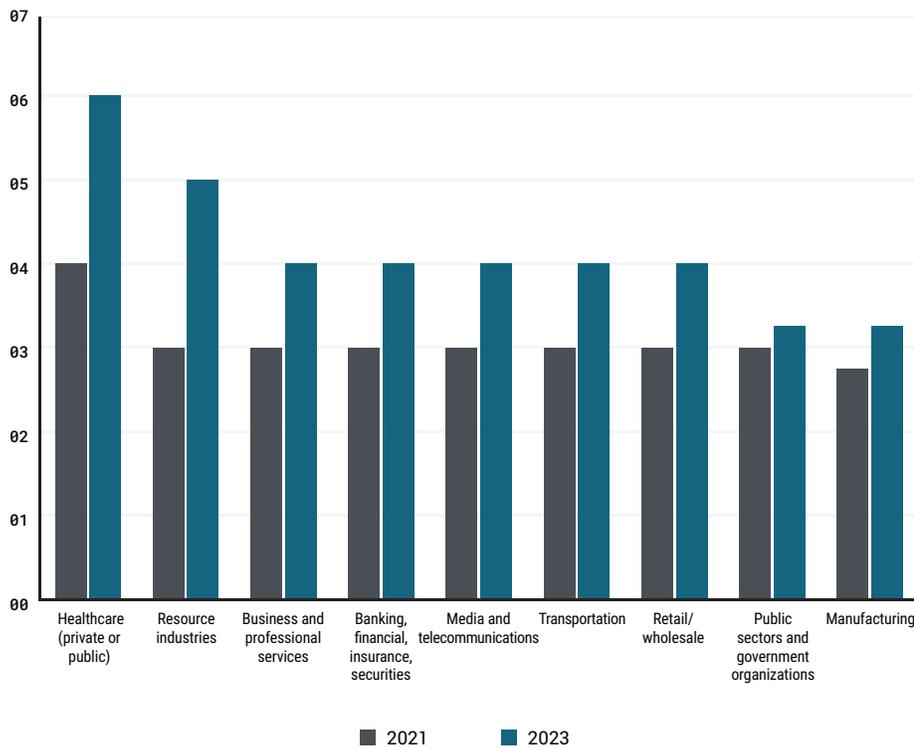
The average number of adopted API management vendors will grow by **33%** in **2 years**

Average number of API management vendors: by country

Legend: 2021, 2023

Growth in the **number** of API management **vendors** adopted by enterprises will be **felt globally**

API complexity affects all countries, some more than others. Senior decision-makers in the U.S. and Singapore are bracing to use five different API management vendors by 2023, while the U.K. is expecting the biggest growth – doubling over two years on average.

Average number of API management vendors: by industry

Chart data — Average number of API management vendors by industry, comparing 2021 and 2023:

Industry	2021	2023
Healthcare (private or public)	04	06
Resource industries	03	05
Business and professional services	03	04
Banking, financial, insurance, securities	03	04
Media and telecommunications	03	04
Transportation	03	04
Retail/wholesale	03	04
Public sectors and government organizations	03	03
Manufacturing	03	03

API complexity will hit the **healthcare** and **resource** industries hardest in the next **2 years**

When it comes to verticals, healthcare and resource industries are expected to face the most complex IT environments in terms of API management vendor use in two years' time, on average, with up to six and five respectively. But the life of other industries won't be simpler – with four API management vendors expected overall on average.

02 API complexity is holding enterprises back

Challenges and pain points

30%+
- Time-consuming management
- Security
- Bug tracing and fixes
- Automation and standardization
- Inconsistent policies and governance

25%+
- Centralized visibility into consumption
- Fragmented CX
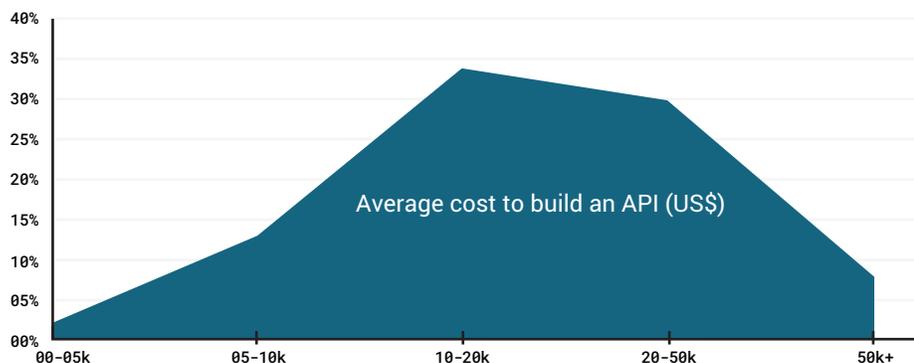- Data silos

20%+
- Low API reuse

15%+
- Scaling innovation

Security is among the **top 5** API complexity **challenges** holding companies back

Senior IT decision-makers consider API complexity a significant challenge that holds their enterprises back. They see a multitude of challenges and pain points related to dealing with multiple API management vendors spanning a large scope of issues – from security to innovation to daily operations.
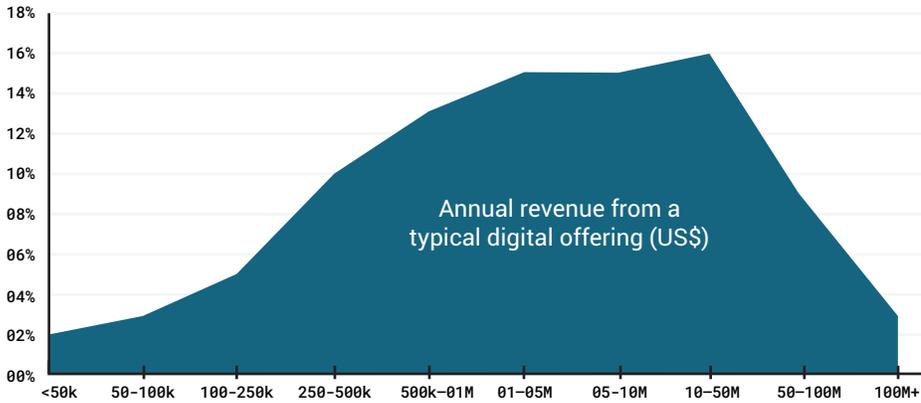
Cost of API complexity

(In US$)

Germany	France	Singapore	Australia	Average	U.K.	U.S.
$19.5k	$21.9k	$26.2k	$26.9k	$29.2k	$31.8k	$35.5k

Average cost to build an API (US$)

40%
35%
30%
25%
20%
15%
10%
05%
00%

00–05k   05–10k   10–20k   20–50k   50k+

Companies stand to save nearly US$ 30K on average every time they reuse an API

Pain points are costly. For example, 23 percent of IT decision-makers see a low reuse of APIs as a pain point stemming from API complexity. This has a concrete cost: if it costs over US$ 29,200 on average to build an API, every time an enterprise reuses an API, it saves that amount.
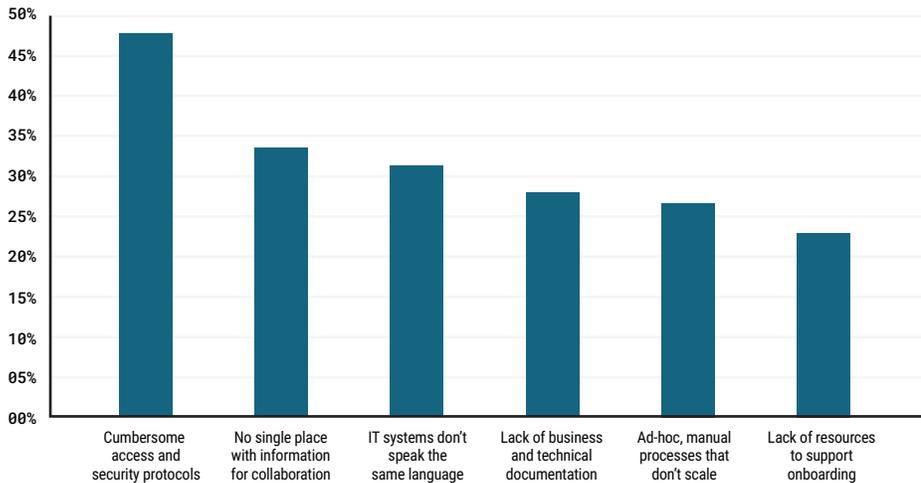
Bottom-line impact

Annual revenue from a typical digital offering (US$)

Integration complexity is seen as the leading cause of digital project delays (42 percent of respondents) and annual revenue takes a direct hit. An average enterprise launches 24 digital offerings and projects each year and 32 percent of them are delayed. While different projects bring in different annual revenue, most of them are in millions of US$. Integration complexity costs enterprises millions US$ every year.

Of the **24** digital **initiatives** launched by the average enterprise each year, **32% are delayed**

Partner onboarding challenges

IT and API complexity make it harder to onboard partners quickly. Only a third of enterprises can onboard new partners within a day. Key challenges are related to the pain points that senior IT leaders contribute to API complexity in general.

Only **1/3** of enterprises can onboard partners **within a day**

03 Enterprises mastering API complexity get ahead

The survey showed a surprisingly strong correlation between enterprises that have mastered API complexity with an API-first approach (those who can build APIs the quickest), and the number of digital projects they can launch each year.

Faster API building

Time to build new APIs

Legend: Hours | Days | Weeks | Months | # of digital launches
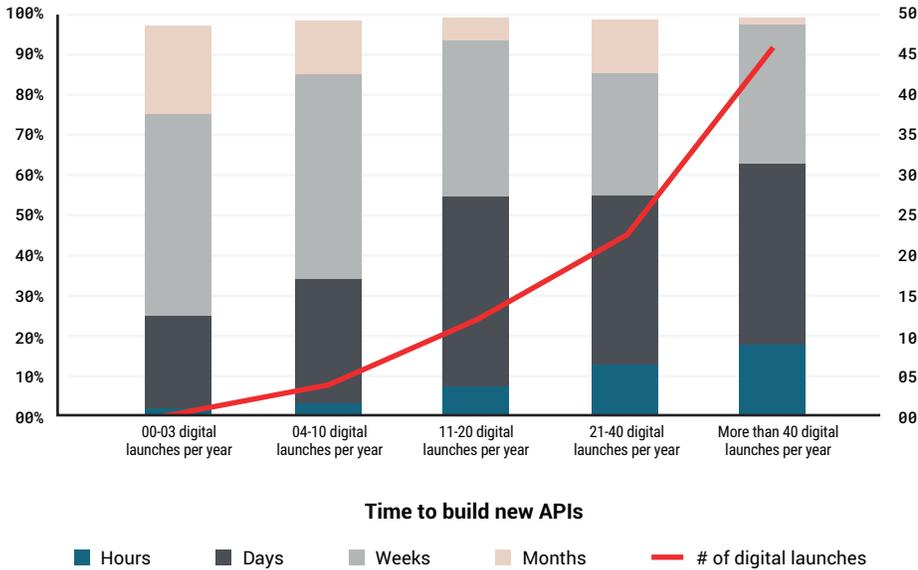
> Building APIs in hours or days, instead of weeks and months, leads to **40 project** launches per year

Enterprises that build APIs in a matter of hours or days are more likely to launch over 40 new digital projects every year, while enterprises that need weeks or months tend to launch fewer digital projects per year.
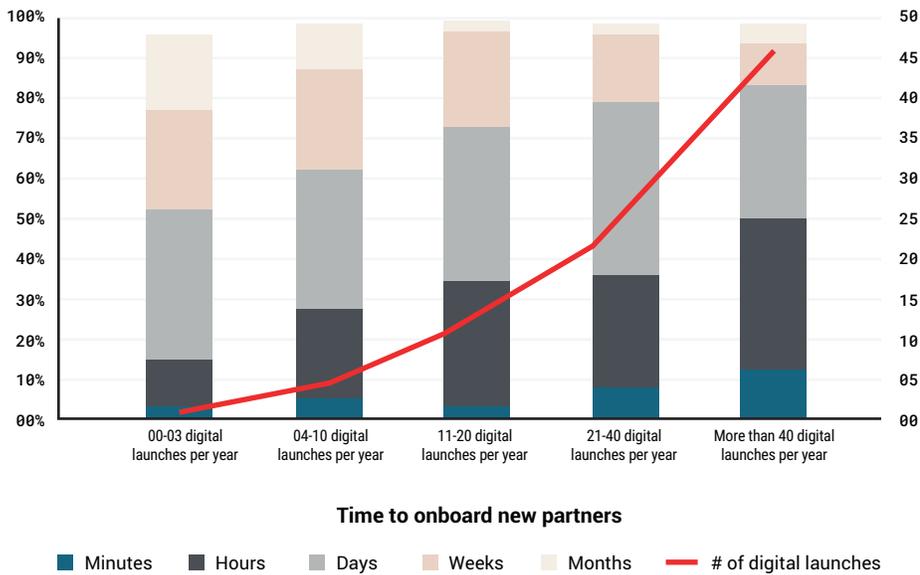
More reuse of APIs

Legend: # of an API reuse
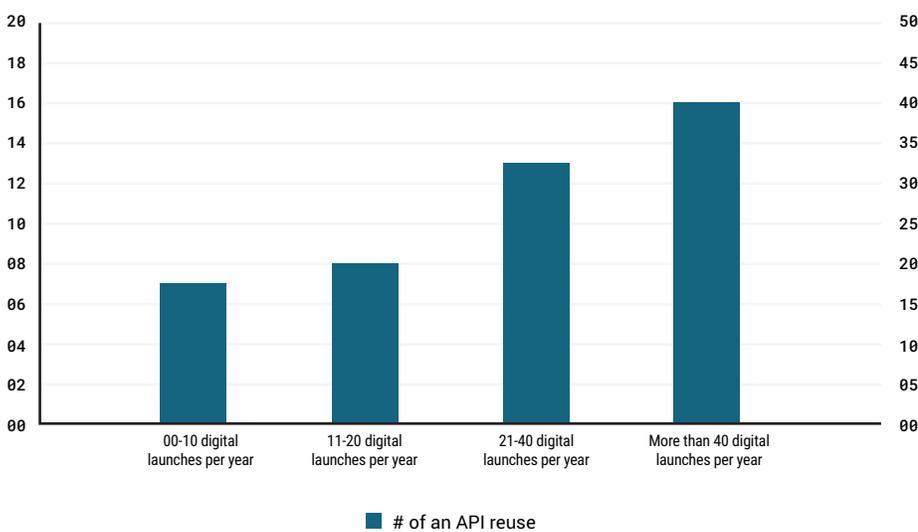
> Reusing an API **16 times** instead of **7 times** can **quadruple** the number of projects launched **each year**

Enterprises that launch more than 40 new projects or products every year tend to reuse an API 16 times, on average, while those launching only zero-ten new projects or products a year tend to reuse an API just seven times.

Shorter onboarding times

Time to onboard new partners

Legend: Minutes ■ Hours ■ Days ■ Weeks ■ Months — # of digital launches

Companies onboarding partners within a matter of minutes or hours launch **10x more** digital projects a year compared to companies that take weeks or months

The survey showed the same correlation between the number of digital launches and the time to onboard new partners. While enterprises that need weeks or months to onboard their partners launch fewer digital projects or products a year, enterprises that can onboard their partners within a day (or few days) are more likely to launch 40 or more new offerings a year.

IT and business benefits

The IT and business leaders surveyed identified a total of 22 benefits that come with mastering API complexity through centralization. IT leaders focus on the benefits related to more effective governance and management, while business leaders focus on doing more things faster, more easily, and more cost-effectively. Both groups agree that centralizing API governance will help them get their business farther.

IT benefits
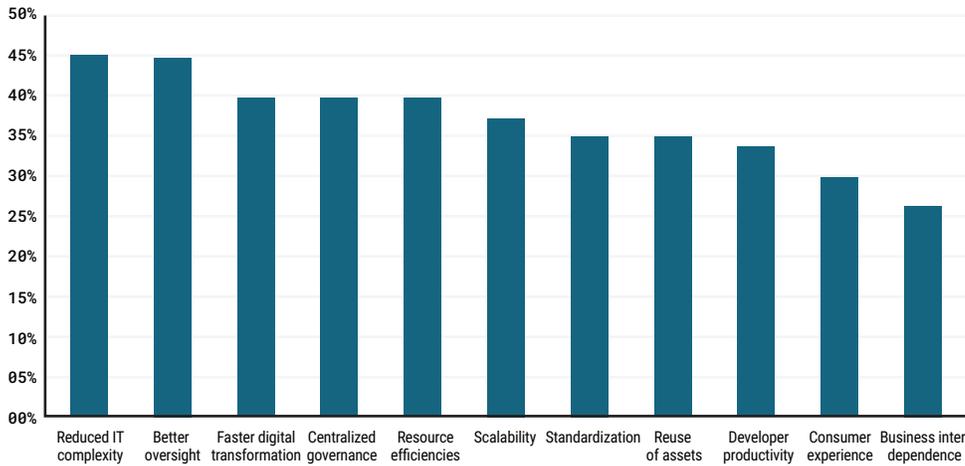
44% of IT leaders primarily benefit from **reduced** IT complexity and/or better oversight
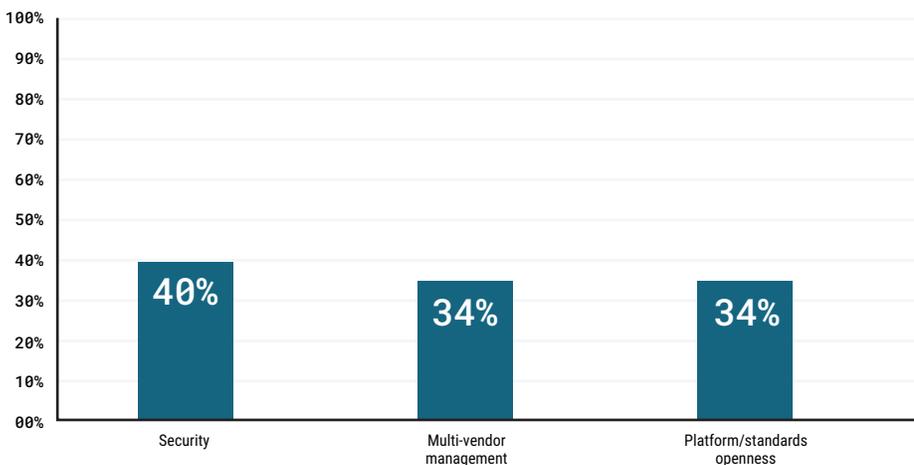
Business benefits
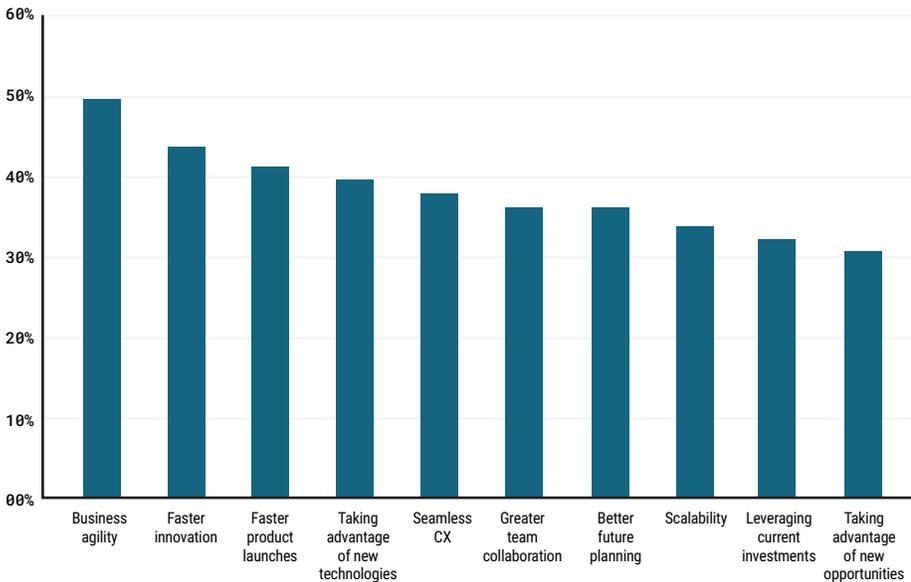
Business agility **ranks 1st** among benefits for business leaders

Not all enterprises know how to master complexity

While the pain points of API complexity and the benefits of mastering that complexity are clear, enterprises are not sure how to move forward and their approaches differ. It's not helpful that enterprises don't have anywhere to turn for advice.

Missing API management vendor capabilities

100%		
90%		
80%		
70%		
60%		
50%		
40%	**40%**	
30%		**34%** **34%**
20%		
10%		
00%	Security / Multi-vendor management / Platform/standards openness	

34% of enterprises don't have the **multi-vendor management capability** needed to master API complexity

Multi-vendor management and platform/standard openness – key capabilities needed to master API complexity – are also top capabilities that are missing today from existing API management vendors.

Ways to approach API complexity
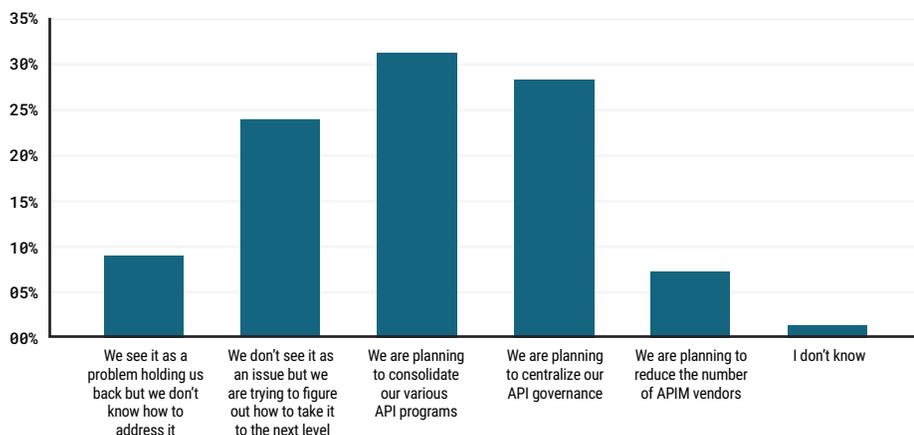
About **66%** of enterprises have some kind of **plan in place** to master API complexity

Roughly a third of enterprises are figuring out how to approach their API complexity, while slightly fewer are focusing on consolidating their API programs. Nearly 30 percent are planning to centralize their API governance. The rest are either focusing on reducing the number of vendors they work with, or don't yet know their plan going forward.

Where does your enterprise fall in its approach to mastering API complexity?

With an open platform approach to API management, you can overcome the challenges of API complexity stemming from multiple solution vendors, role-specific integration needs, and unmanaged APIs in the wild. Axway's Amplify API Management Platform can help.

About Vanson Bourne

Vanson Bourne is an independent specialist in market research for the technology sector. Their reputation for robust and credible research-based analysis is founded upon rigorous research principles and their ability to seek the opinions of senior decision-makers across technical and business functions, in all business sectors and all major markets.

For more information, visit www.vansonbourne.com

Learn how Amplify can keep
API complexity from holding your enterprise back →