

THE STATE OF  
**API INTEGRATION**  
Report

2021

# TABLE OF CONTENTS

<b>A Word From the Editor</b> .....	<u><a href="#">3</a></u>
<b>Introduction</b> .....	<u><a href="#">5</a></u>
<b>Technical Trends In API Integration</b> .....	<u><a href="#">11</a></u>
<b>Business Trends in API Integration and Benchmarks</b> .....	<u><a href="#">16</a></u>
<b>About the State of API Integration Report</b> .....	<u><a href="#">24</a></u>
<b>Closing</b> .....	<u><a href="#">31</a></u>

# A WORD FROM THE EDITOR

## Welcome to the State of API Integration 2021 report!

Five years is a long time in tech. Lots can change. And yet, looking back over five years of producing the State of API Integration report to give leaders and practitioners a better handle on relevant trends, I'm struck that 2020 feels like the year API integration was reinvigorated.

Last year as we released this report I wrote:

It's a new decade and a new set of expectations. A balancing act between driving innovation and "playing nice" with a growing ecosystem of overlapping applications outside our control. The challenge itself is not new – APIs have been connecting applications for years – but the problem space facing integration professionals and application developers has gotten bigger. integration professionals and application developers has gotten bigger.

If last year the challenge facing API pros was *bigger*, then this year it was *faster*.

Hundreds of integrators took our annual survey and gave even more time to answer additional questions about COVID-19 and the most impactful long-term trends. These professionals unambiguously stated that the pandemic has thrust API integration to the fore in terms of high-priority projects and increased budget allocation. But from the responses we see the additional resources are meant to not just do more, but to do more faster.

## In particular, a few key points stand out:

- COVID-19 has had a remarkable impact on the integration industry. Respondents indicated that agility has become the foremost concern for their organizations and that elements like “speed”, “innovation”, and “collaboration” are the biggest benefits of API integration. Cost-savings remain an important benefit, but clearly time-to-market and time-to-value have bumped to the top of the priority list as companies deal with changes brought on by the pandemic.
- Across five years conducting the State of API Integration survey, we’ve seen the increasing criticality of building integrations for both internal use and customer-oriented digital products. The pandemic has further catalyzed long-term trends like tooling evolution, API-first design, increased need and demand for standardization, more SaaS apps and the importance of cloud infrastructure, and the rise of the platform business model.
- We also see continuing evolution of technical trends, in particular higher expectations for GraphQL. Three-quarters of respondents expect it to eventually become the dominant API type (only 40% said the same in 2020.) However, there’s a gap between the types of APIs devs prefer to consume and the APIs that publishers offer. With developer preferences and ease-of-use in mind, more companies are starting to publish GraphQL APIs, though widespread adoption remains something of a Catch-22.

As every year, we hope this report sparks conversation; add your comments with #StateofAPI. More, we hope this report provides useful insights that help you advocate for, design, and build strong API integration solutions that lead to genuine change, improve your platform strategy, and ultimately deliver the user experience you and your customers want.



# Happy Integrating!

Mark Geene  
CEO and Co-Founder, Cloud Elements  
[@mgeene](#)



An aerial photograph of ocean waves, showing the intricate patterns of white foam and blue water. A solid red rectangular overlay is positioned on the left side of the image, partially covering the waves. The number '01' is printed in white on the red overlay.

01

# INTRODUCTION

## WHAT GOT US HERE...

Five years of surveying API evangelists and integration professionals to produce the annual State of API Integration Report has shown that the early excitement around APIs has come to fruition in the form of application ecosystems. From microservices architectures (MSA) to the web of 1,500+ applications that enterprises use to run and manage their businesses, an ecosystem offers perhaps the most apt metaphor to explain the rise and use of APIs today.

First and foremost, ecosystems are resilient. At a technical level, much of the early excitement around APIs with REST methods, clear documentation, and standards (from data formats in key industries to authentication protocols) all stemmed from an urgent need to overcome the brittle and siloed world of monolithic systems and limited interconnectivity. Greater interconnectivity, it turned out, was the only way to cope with the accelerating pace of change and new demands on software.

However, the resilience of ecosystems is contrasted with periods of rapid change. Punctuated equilibrium. When looking back on the last decade of evolution in the API integration space, as made clear by this year's respondents, it's evident that since 2010 the technology of the API space has evolved fairly consistently but the use of APIs and the application ecosystems they enable has abruptly changed due to the COVID-19 pandemic.

This is the reality we're both tired of hearing about and cannot avoid.

### How would you recommend technical leaders think about API design and/or integration patterns in light of the pandemic?

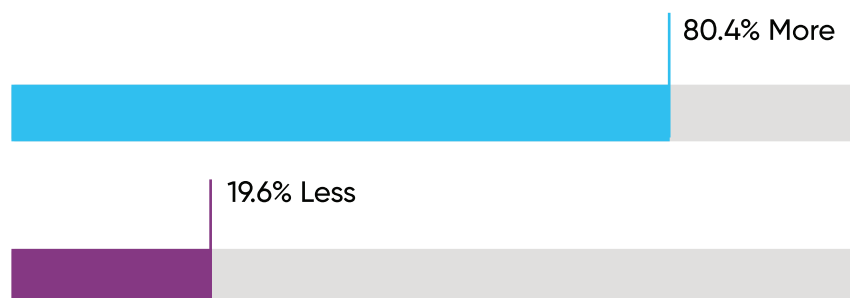
Linking the interactions of customers, partners, and employees with your products and services and how the data and experience logically link together to drive ease-of-use and value.

This year we asked API and integration professionals to reflect both on the most important trends of the past five-to-ten years as well as the impact of COVID-19 on their business and key technical choices. This is where we see that many of the technical trends, such as the rise of GraphQL, have evolved steadily over the past ten years while COVID-19 has abruptly shifted the business focus to make speed and agility as important as innovation.

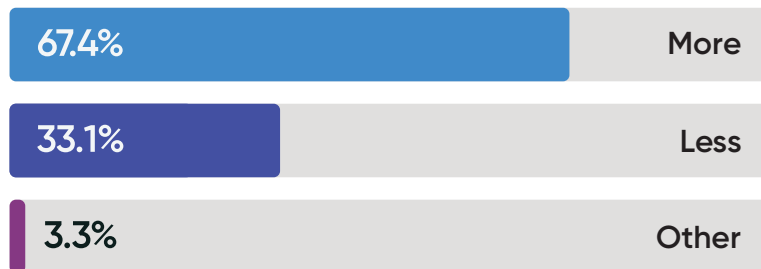
Fully 80% of this year's respondents said that COVID-19 has made integration more of a priority for their company and 67% said COVID-19 has increased investment in integration (i.e. employee time) and middleware tooling (i.e. budget). 70% reported they have invested in new integration technology or significantly modernized their API offering due to COVID-19. For some, however, the heightened demands in 2020 on integration teams and tools also highlight long-ignored roadblocks, as one respondent said:

"The speed at which near real-time data can be shared most significantly impacts [our] opportunity to adapt and innovate."

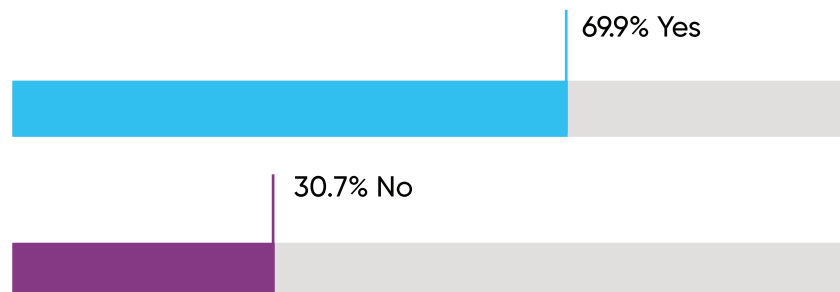
Overall, has COVID-19 made integration more or less of a priority for your company?



Has COVID-19 caused your company/your clients to allocate more or less resources to integration work (budget & FTE time)?



Has COVID-19 caused your company/your clients to invest in new integration technology or modernize your API offering significantly?





In contrast, many respondents commented that the most important trends in API integration from the past decade include well-worn topics: **API-first design patterns and standards (e.x., OpenAPI) for software and technical architectures, the maturation of tooling to support API integrations (shoutout to Postman), the rise of cloud infrastructure and SaaS applications, and the success of platform business models.** For example, in respondents' own words:

- "Internet-based applications are becoming more and more popular... The APIs provided externally make the content more relevant between sites, and these open platforms bring greater value to users, developers, and smaller sites."
- "API-first design and event-driven approaches - rapid evolution of scalable IoT and other platforms."
- "Adoption of iPaaS as a standard-ish toolset for integration" and "Postman. Because it is a boon for developers."

Finally, looking ahead we asked respondents to predict the most impactful trends for API integration for the next 5-10 years. As is perhaps always the case at a time like this, the past looks banal and the future like fantasy.

Respondents said the trends they expected to have the biggest impact on integration professionals in the future include: **robots and no-code tools that change the nature of programming, standardization and reuse in service of more agile/ composable solutions, AI/ML services, event-based architectures, and (hopefully) overcoming the constraints of legacy systems.** In respondents' own words:

- "Robots, microservices, and GUI-based/ no-code API integration will join [together], which will drive innovation and simplify life for developers and customers."
- "All code that can be modularized are modularized to achieve a more agile, decentralized, and flexible enterprise architecture."
- "The biggest opportunity is to create seamless, broad experiences... With the explosive growth of machine learning, we should expect to see a huge growth of artificial intelligence services.. enabling [developers] to build applications they never imagined."
- "The adoption of event-based architectures to allow for unidirectional data flow across partner systems. I feel there can be more of a horseshoe model that can push back events after execution of commands (in the CQRS sense) from clients."
- "Critical mass of microservice and APIs replaces legacy due to ongoing investments."

## What ONE thing do you think API publishers and/or integration pros should change to drive better results in the future?

"As the need for integration between existing APIs increases, we'll need better tools for designing, building, and – most importantly – monitoring those integrations. When you don't own the provider's data model and don't control their API design, the processes and tools you need to build your own service that depends upon those external APIs is very different from the processes and tools you use to design and build your own native API stack. The work of safely, securely, interacting with APIs from other providers will be the most critical element of succeeding in an API Economy going forward."

Mike Amundsen, <http://g.mamund.com/newsletter>

What do these predictions mean for integration professionals this year? For several years we have asked respondents about the benefits realized due to API integration. What's interesting when compared to prior years is that for the first time speed in meeting business demands (44%) & innovation (40%) fully outweigh benefits related to productivity (37%) or cost (23%).

This compares to last year's stack-ranking in which respondents put productivity first (58%), followed by innovation (53%), revenue growth (42%), speed in meeting business demands (35%), and then decreased costs (29%).

The data make clear that at the top of the list of key drivers for organizations of all kinds, agility has joined the top of the pantheon with innovation and productivity to guide leaders and separate winners from losers in 2021 and beyond.

### What business results has your company realized from leveraging APIs?



02

# TECHNICAL TRENDS IN API INTEGRATION

## API INTEGRATION TECHNICAL TRENDS

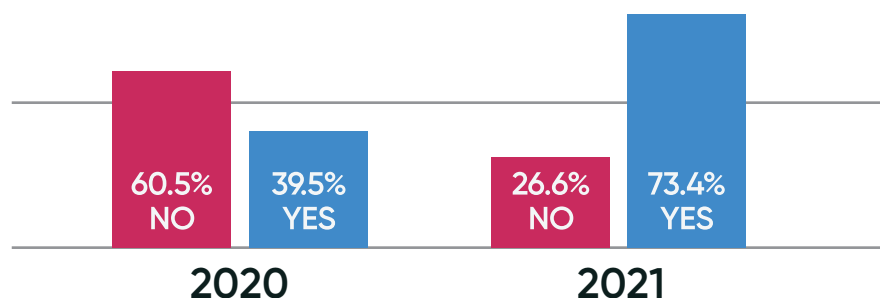
While the COVID-19 pandemic may have thrust agility into the list of foremost concerns for leaders (technical and non-technical) the most standout technical trends revealed by the 2021 State of API Integration respondents had been building for years prior to the pandemic: the growth of GraphQL and importance of merging continuous deployment with integration middleware.

First, perhaps the most striking finding from this year's report is that three-quarters (75%) of respondents expect GraphQL to be the dominant future query language for APIs. For reference, in 2020 only 40% said GraphQL would be the predominant approach in the future. However, challenges still exist for GraphQL. Both this year and last year respondents identified the same limitations: skillset and market adoption (2021: 63% and 40% of respondents, respectively; 2020: 46% and 42%, respectively).

Additionally, respondents highlighted the tradeoffs inherent in any approach to integration and GraphQL specifically. As one respondent put it:

"I think the move away from an RPC approach to API interfaces towards a resource-based model is the most important trend [of the past decade] because it creates integrations that are in sync with the design of the internet. Hopefully, GraphQL doesn't unintentionally screw that up." ([more in this article](#))

Do you think GraphQL will become the predominant API style for your business in the future?

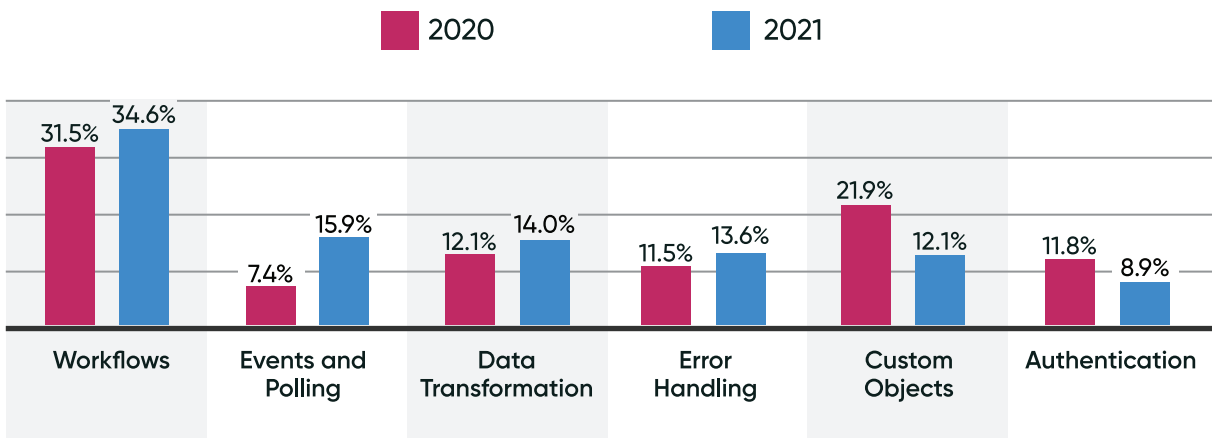


Second, when respondents answered what one thing would make integration faster and easier, many echoed the need to, as one respondent put it, "Achieve a more agile, decentralized, and flexible enterprise architecture."

Technically, respondents continue to focus on "simpler, but still secure authentication" and "stricter standards." Interestingly, this year's responses highlighted the importance of **"testing [that] is integrated into CI to speed up abnormal feedback and create a strong quality system."**

This echoes the finding that workflows are the most time-consuming part of integration development (35%), followed by events (16%). This makes sense: workflows are the logic heart of each integration and therefore the aspect of integration development that most closely parallels agile CI/CD mechanics, hence the comments from respondents seeking greater CI/CD integration.

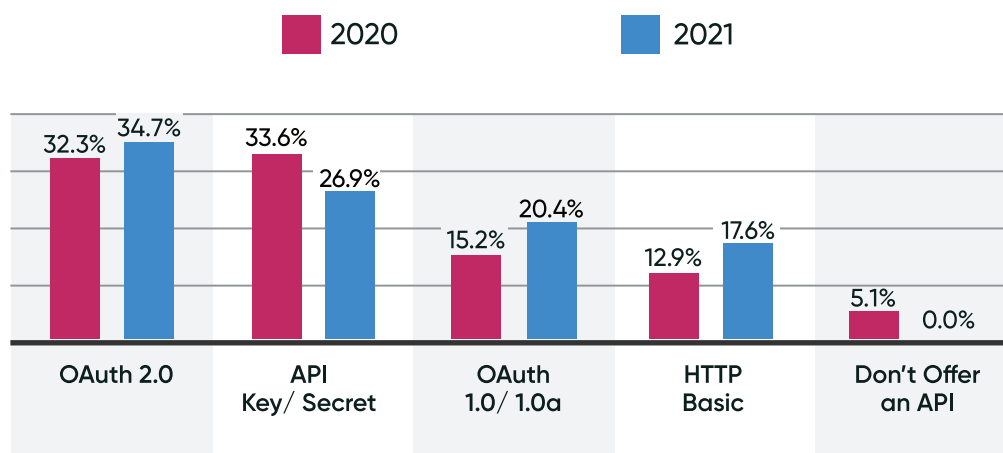
## What part of the integration development is the most time consuming?



For the first time in 2021, we looked at not only developer preferences for key elements of API integration (i.e. protocol and event style) but also the gap between what developers prefer and what API publishers offer.

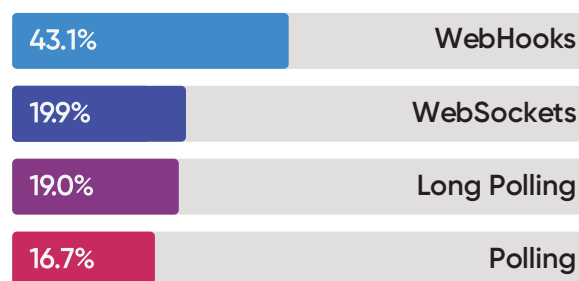
While respondents prefer REST APIs (with or without hypermedia), there are more who prefer GraphQL than who offer it. Respondents also said that the greatest barriers to GraphQL adoption are "skillset" (first) and "industry adoption" (second). Finally, only 5% of respondents prefer to consume SOAP APIs, but 11% said that's the predominant style offered by their organization.

## Which Auth mechanism do you prefer to consume?

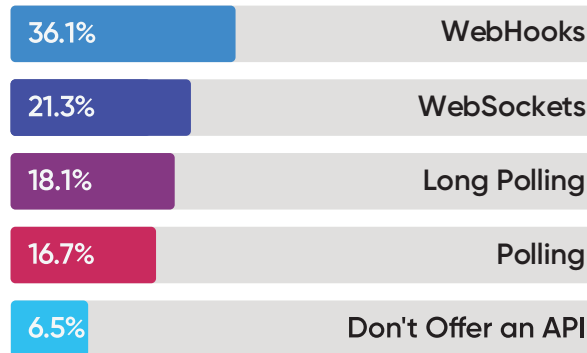


And when asked about eventing patterns, respondents indicated more parity between developer preferences and what's on offer from API publishers:

## Which event-driven integration patterns do you prefer to consume?

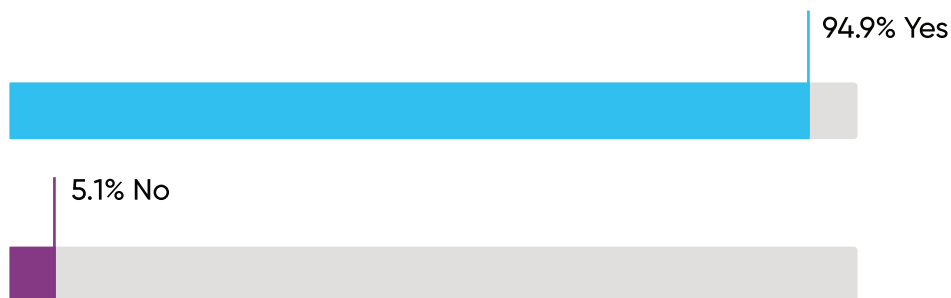


## Which event-driven integration patterns does your organization primarily offer?



Finally, respondents overwhelmingly want more standards (95% 'for' vs 5% 'against') to cut down on the time spent on data mapping and transformation. This finding falls in line with responses for each of the past five years (ex. 90% 'for' vs 10% 'against' in 2020).

## Do you feel the industry should invest in and adopt more data standards?



Taken as a whole, these trends show that developers clearly prefer easy-to-use APIs, auth methods, and standards. However, many API publishers have yet to modernize their offering, leaving the overall API economy still nuanced and time-consuming for integration pros.

03

# BUSINESS TRENDS IN API INTEGRATION AND BENCHMARKS



# THE BUSINESS OF APIs

Like the technical trends in API integration, the business drivers and benefits in 2021 generally match the evolution that readers will recognize from five years of asking the same questions. In summary:

- 1 Integration remains 'critical' or 'very critical' to business strategy (72%).
- 2 Speed, innovation, and collaboration (revenue-focused benefits of API integration) have surpassed cost savings and productivity gains (cost-focused benefits).
- 3 For the first time, we have insight into benchmarks for headcount and budget for integration teams and middleware.

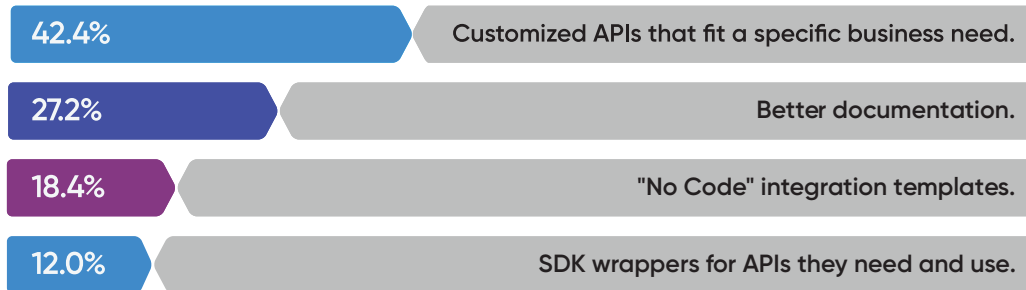
First, 72% of respondents felt that API integration is 'critical' or 'very critical' to their business strategy. Interestingly, this finding is down slightly from 84% of respondents in 2020. Especially in light of COVID-19, this seems counterintuitive – respondents say COVID-19 has made API integration more important and made their organizations dedicate additional resources.

While this could be a random fluctuation in the data, we found that ISV respondents see API integration as most critical (compared to CIOs/IT or SIs) and by role Product leaders and managers rated API integration slightly less 'critical' when compared with Sales, Engineering, and CEOs/General Management. Perhaps more likely than random fluctuations, this result could be due to the pervasive feeling that, as one respondent said:

**"Integrations are becoming table stakes."**

To dig deeper into what makes API integration such an important supporting factor for overall strategy, we ask, "What do customers and partners need most from API publishers?" This year, just as last year, respondents said 'APIs that fit a specific business need' (42%), followed by 'Better documentation' (27%). This shows that fit-for-purpose APIs are still clearly what API consumers (i.e. customers and partners) want, even if the second-place response is closer than in past years. In 2020, 54% of respondents said 'APIs that fit a specific business need,' though 'No-Code integration templates' came in second (19%).

## What is in highest demand from your customers and partners related to API integration?



Second, as we mentioned, the benefits that respondents report shifted in 2021 first to revenue-focused drivers (speed, innovation, and collaboration), whereas cost-focused drivers (savings, productivity gains) were more evenly interspersed in top responses in the past. That is not to say that hard dollar savings and productivity gains do not justify the investment; rather, the short-term pressures of the pandemic have aligned with long-term trends and more leaders now connect API integration with growth, agility, and future innovation for their businesses.

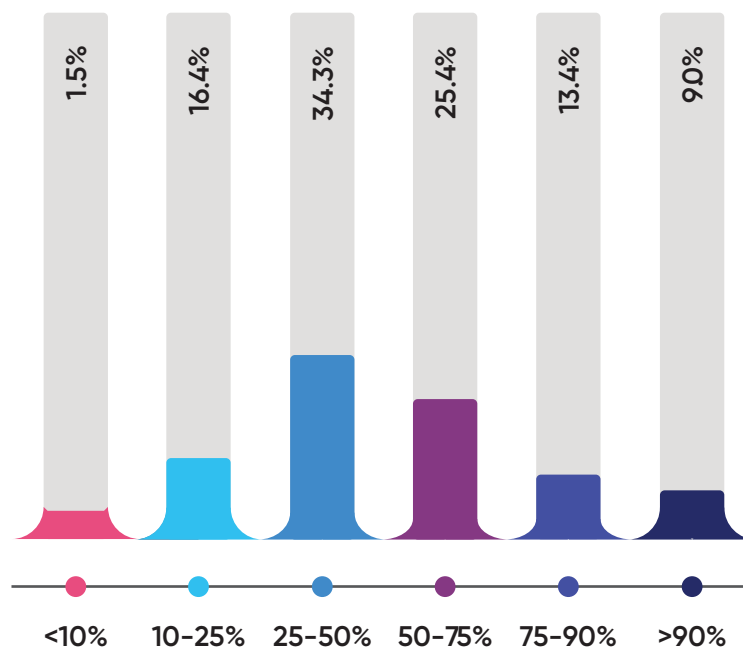
## What business results has your company realized from leveraging APIs?



In addition to these benefits, 66% of respondents said that their organization charges for API access (compared to 45% of respondents in 2020 and 56% in 2019). Additionally, nearly half of respondents (48%) say that the majority of their customers will renew or upgrade if offered the integrations that they need, which maps closely to the trends in 2021.

Taken together, this could be a result of respondents saying that COVID-19 has increased demand for integration—organizations who find their APIs are in greater demand from customers and partners may find they have greater power to charge for their APIs.

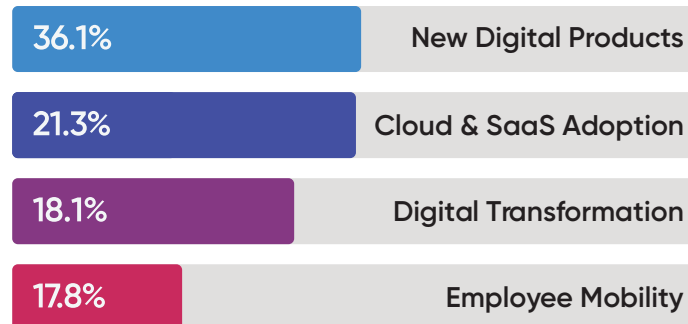
## Approximately what percentage of your user base will upgrade or renew if you provide the integrations they need?



How many of your users do you think would renew if you offered more/better integrations?  
Tweet us at #StateofAPI

What's more, 77% of respondents identified as 'platform providers' ([see last year's discussion on the definition of a platform provider](#)) compared to 65% in 2020, and 57% in 2019. Most respondents also said that they offer and use private APIs (70%), roughly half offer public APIs (44%), and 32.3% offer partner-specific APIs (compared to 75%, 60%, 58% respectively, in 2020). Private APIs most likely indicate the rise of microservices architecture for internal technology needs as well as customer-facing digital products. In fact, slightly more respondents said that new, digital products are driving integration demand (51%) vs cloud/SaaS adoption (49%) or transformation and modernization efforts (43%)

## Which of the following use cases are driving your need for app integration?



Finally, integration needs continue to consume a significant amount of developer time as well as budget for ISVs and enterprises alike:

- **ISVs:** respondents who build digital products said they built an average of 15 integrations in 2020 and plan to build 20+ on average in 2021. However, they report it takes an average of 58 days to build an integration with advanced capabilities (and that it can take 300 days for very complex scenarios).
- **CIOs/ IT:** respondents who focus on internal integration said they built an average of 20 integrations in 2020 and plan to build 20+ again in 2021. These respondents also report it takes an average of 47 days to build an integration with advanced capabilities (and that it can take 260 days for very complex scenarios).
- **System Integrators:** SI respondents said they built an average of 18 integrations for clients in 2020 and plan to build 25 on average in 2021. Interestingly, SIs report it takes only 28 days on average to build an integration (and up to 150 days for the most complex cases). Self-reporting doubts aside, it's possible that SIs do in fact work faster because of greater skill or more repetitions building similar integrations. Alternatively, it could be that CIOs prefer to manage the most complex, mission-critical integration work in-house.

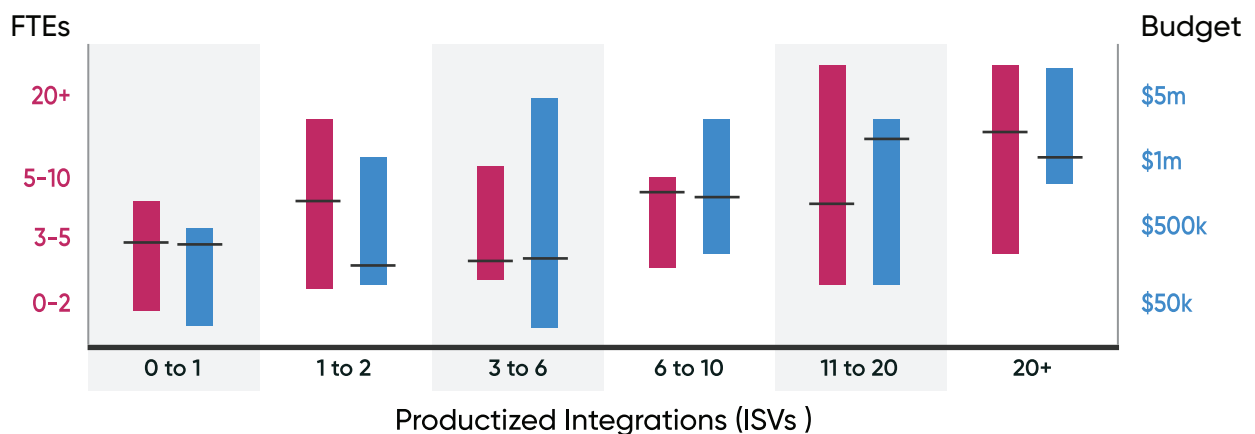
To help leaders and executives make the most of this annual survey, for the first time we asked respondents to share information about the size of their integration teams and budget so that readers can consider their own investments relative to peers.

The first key finding: it's difficult to compare the complexity of two integrations and predict the resources needed. For example, a data dip to append additional fields between a marketing automation tool like Marketo and a data enrichment service like Dun & Bradstreet is relatively simple compared to the enterprise ERP integrations with NetSuite, SAP, or JD Edwards that a corporate payments platform like US Bank or CapitalOne need in order to function properly.

So, we have chosen instead to segment the response data by ISVs and CIOs/IT and then by the number of productized integrations available for customers (for ISVs) and company size (for CIOs). The tables below demonstrate the range of responses and call-outs of some key points/results.

## Independent Software Vendors (ISVs)

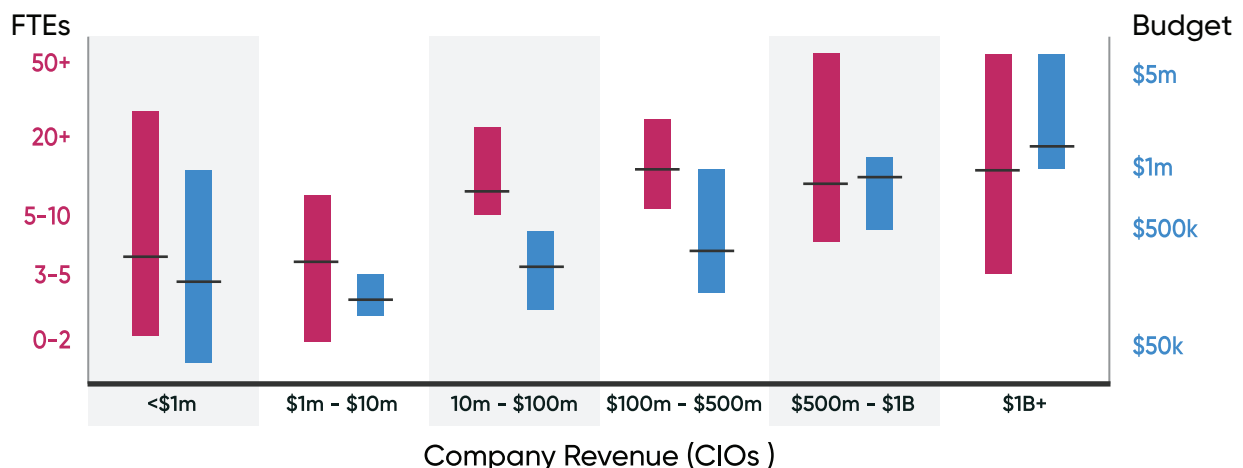
**Among ISVs respondents:** 26% reported building productized or self-serve integrations and workflows as a feature in their product, while 51% said they offer an API, 36% said they offer an SDK, and 33% said they offer users a 3rd party iPaaS UI for integration needs.



- Companies that offer users **3-6 productized integrations** reported a team of 2 - 4 FTEs and a software budget or integration middleware of <\$50k, on average. In terms of integration investments, 33% reported using an ESB, 50% APIM, 18% iPaaS, and 50% also rely on custom code.
- Companies that offer users **7-10 productized integrations** reported a team of 5 - 10 FTEs and a software budget of \$250k - \$1m, on average (though there's significant variability based on company size). In terms of integration investments, <10% reported using an ESB, most (80%) APIM, 60% iPaaS, and 80% also rely on custom code.
- Companies that offer **11-20 productized integrations** reported ~20 FTEs (in addition to significant outsourced support) and a software budget of \$100k - \$1m, on average. In terms of integration investments, 33% reported using an ESB, 33% APIM, <10% iPaaS, and 30% also rely on custom code.
- Companies that offer **20+ productized integrations** reported 25+ FTEs (in addition to significant outsourced support) and a software budget of \$1m - \$5m, on average. In terms of integration investments, 50% reported using an ESB, >90% APIM, <10% iPaaS, and many also rely on custom code.

## CIOs/IT

**Among respondents who identified as CIOs or IT professionals:** On average, 25% said they have invested in an ESB, 71% have invested in APIM, 20% maintain investments in message-oriented-middleware (MOM), and 24% have purchased iPaaS tools; 22% also rely on custom code.



Looking at integration team size and budget by company size:

- Companies with <\$1m revenue reported the widest range of team sizes and a range of budgets from less than \$50k to more than \$1m per year.
- Companies with \$1m - \$10m in revenue reported 2-4 or 5-10 FTEs (though some higher) and most respondents spend \$100k-\$250k per year for integrations middleware.
- Companies with \$10m - \$100m in revenue reported 5-10(1st) then 11-20 (2nd) FTEs and most respondents spend \$250k-\$500k per year for integrations middleware.
- Companies with \$100m - \$500m in revenue reported 5-20 FTEs and most respondents spend between \$250k-\$1m per year for integrations middleware.
- Companies with \$500m - \$1B in revenue reported an even distribution of FTEs from 5 to 50+ and most respondents spend \$500k-\$1m per year for integrations middleware.
- Companies with \$1B+ in revenue also reported an even distribution of FTEs from 5 to 50+ and most respondents spend >\$1m per year for integration middleware.

## SYSTEM INTEGRATORS (SIs)

Finally, among respondents who identified as SIs, 21% indicated they have invested in an ESB, 45% have invested in APIM, 16% in MOM, 37% in third-party iPaaS, and 24% said they also rely on custom code. Perhaps most interesting: **more SI respondents than CIOs report using iPaaS tools, which could explain why SIs report less time to build integrations than CIOs.**

04

# ABOUT THE STATE OF API INTEGRATION REPORT



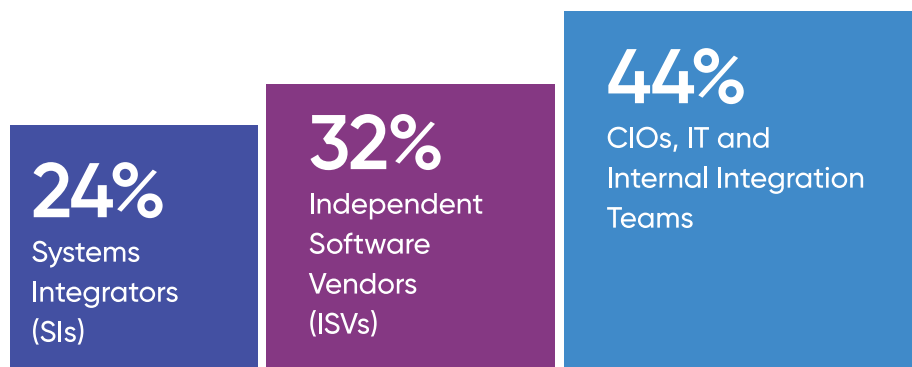
## ABOUT THIS REPORT

The fifth annual State of API Integration Report is based on responses from nearly 250 respondents from 30 countries globally.

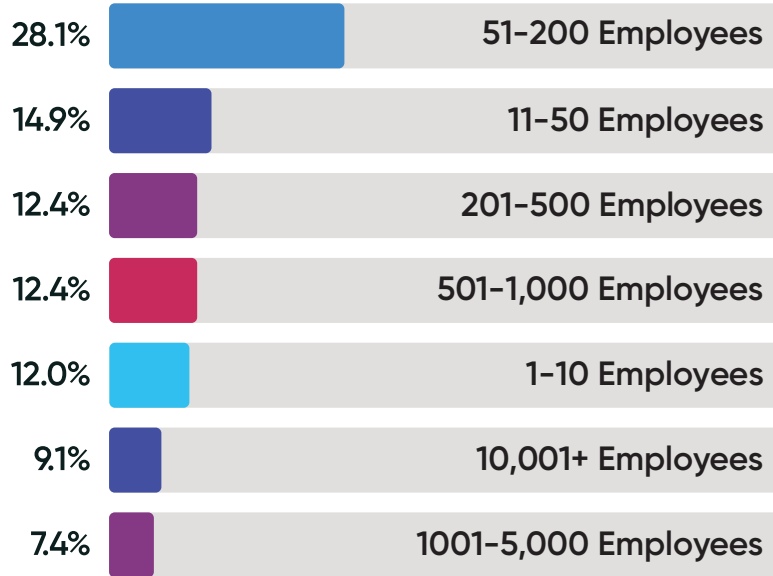


The survey was open from November 2020 through early February 2021. Key respondent demographics include:

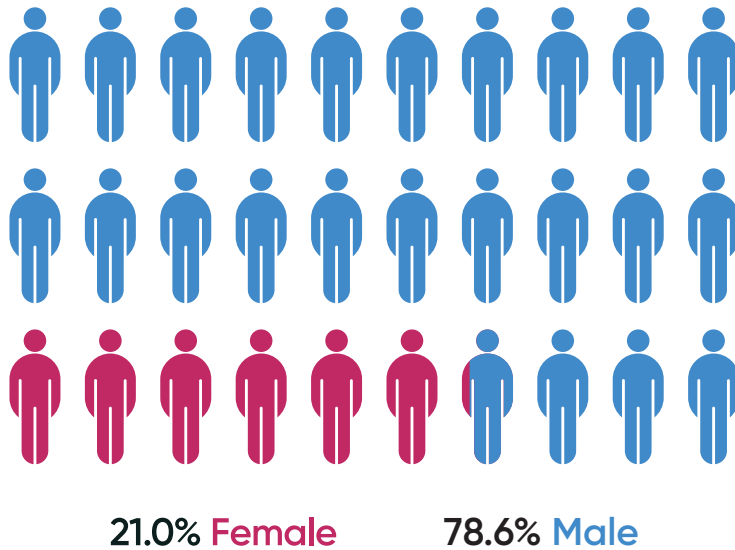
### Integrator Type



## Company Size



## Gender



## CONTRIBUTOR QUOTES

We asked, they answered. See what contributors to the State of API Integration from the past five years think about the future of API integration, from ways to drive better growth to the need for better integration between CI/CD tooling.

### What ONE thing do you think API publishers and/or integration pros should change to drive better results in the future?



The fast adoption of APIs across the enterprise resulted in heterogeneous API technologies, each providing specialized value. Your API governance needs to move up the stack to provide visibility and controls across these API silos. By aggregating metadata across API silos, you unlock relevant insights and analytics. - **Francois Lascelles, Chief Architect, Amplify**



The lack of data standards or any data model consistency between systems of record continues to be the largest obstacle for us to overcome across the industry at large. A continued explosion of cloud-based applications - each becoming increasingly niche, and decreasingly integrated - defines a clear market opportunity for app providers, integration platforms and API practitioners. API publishers should look for ways to embrace existing or de facto standards in their API design - even the simplest improvements such as date & time standardization can ease the pain of integration. No doubt there's an opportunity for integration vendors here, too. As the vendor landscape continues to see inevitable consolidation, it's more feasible for market leaders to help shape the future of data standards.

- **Ross Garrett, Head of Product, Volkswagen Automotive Cloud**



The proliferation of no-code tools offered by cloud platforms and traditionally API-based developer tools is impossible to ignore. These tools increase developer productivity by cutting out the work of spinning up servers and managing infrastructure and even have the potential to broaden user bases. API publishers who continue to ignore standards and shirk machine-readable specs will be left even further behind while those who build for a future of widely utilized no-code tools will reap the rewards. – **Luke Vance, Product Manager, Twilio**



Think about security earlier in the API's lifecycle. Right now, security is mostly an afterthought. However, security design, much like architecture design, is not easy to change after an API is published into production. It is critical that, starting from design time, we have a clear understanding of the data the API is going to expose, who the consumers will be, how sensitive the data is, and how it will be accessed. Establishing a threat model for APIs will help us define which authentication needs to be used, the authorization requirements, and the data transport requirements. In other words, it helps us adapt the security measures to the risk of exposing the API. – **Isabelle Mauny, Field CTO and Co-Founder, 42Crunch**

## What do you think is Covid-19's greatest impact (in terms of API integration)?



Collaboration was the watchword of 2020, and finding ways to effectively collaborate in our "new normal" working environment definitely extends to APIs and integration. This starts with great documentation, but I see opportunities for platform providers to invest in new features that make it easier for developers to work together, review their respective contributions, and track changes in real-time. A Miro-esque experience for integration developers. – **Ross Garret, Head of Product, Volkswagen Automotive Cloud**

Respondents expect GraphQL to become the standard but felt 'industry adoption' and 'skillsets' are the most important barriers; how would you recommend addressing either factor (or both)?



Fear of high initial investment or undetermined return on investment has prevented industry adoption of GraphQL for years despite its massive developer fanbase. The acceleration of digitalization due to the COVID-19 pandemic has sparked motivation for this investment as evidenced by the rapidly growing lists of customers of GraphQL-centric developer tools such as Dgraph, Hasura, and even startups like Gatsby.js. GraphQL evangelists and adoption promoters should focus their efforts on digital customer engagement initiatives where the need for additional data is constantly evolving and the ROI is most obvious.

- Luke Vance, Product Manager, Twilio

Respondents called out the need for greater integration between integration testing and their CI/CD tooling, what's one piece of advice you'd give someone thinking about DevOps, API security, and integration in 2021?



Automated security testing. We have greatly enhanced the quality and the reliability of our code by automating functional testing inside our CI/CD pipelines. We now need to do the same for security testing. For each functional test, we should have 10 security tests. Hammer your APIs with bad tokens, bad data, unexpected calls, and test for fine-grain authorizations breaches – the number one problem with APIs today!

- Isabelle Mauny, Field CTO and Co-Founder, 42Crunch



APIs should have stated security objectives and associated test cases that can be automated during any update. Your coverage for the top vulnerabilities across all your APIs is hard to achieve and you should assume some blind gaps persist. By moving to a DevSecOps model where security rules are abstracted out of API implementations and into its supporting tooling, you enable the enforcement of consistent API security rules. - Francois Lascelle, Chief Architect, Amplify

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## Mark Geene

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Mark has made a career of solving business problems with a strong technology foundation. In his previous role as CEO of Channelinsight, a channel data management SaaS company, Mark kept running into challenges trying to find APIs that could connect the hundreds of apps and systems “proliferating like wildfire” that his customers and partners were using. Cloud Elements was born of that need.



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# CLOSING

# CLOSING

As you can see, a lot is happening in the world of API integration. Join the ongoing conversation by using the hashtag [#StateOfAPI](#) or follow us on Twitter at [@CloudElements](#).

We hope you find this analysis of key trends and benchmarks useful and even enjoyable. To recap a few of the highlights of the report:

- The impact of COVID-19 is clear: prioritizing integration patterns, investments, and projects based on cost savings or innovation is not enough. Agility is now a top-level concern and a factor that will separate winners and losers in the future – “speed” “innovation” and “collaboration” were the top three benefits of API integration indicated by respondents.
- The pandemic has put more pressure on integration teams and heightened focus on the role of integration for internal and customer-facing solutions. Yet this impact only reinforces long-term trends, including API-first design patterns, standardization (e.x. OpenAPI), tooling evolution (e.x. Postman), the rise of cloud infrastructure and SaaS applications, and the success of platform business models.
- Speaking of long-term trends, GraphQL has been on the rise for years, but this year’s respondents indicated significantly higher expectations for GraphQL with 75% saying they expect GraphQL to become the dominant API style (vs just 40% of respondents in 2020). Respondents did say GraphQL has yet to achieve critical mass in the industry, but given the rising number of organizations offering GraphQL APIs, this is likely to tip in coming years.

Cloud Elements produces the State of API Integration report annually to give practitioners research-backed information with which to make better decisions. We’d like to sincerely thank all those who shared and responded to this survey or contributed to creating this report. For additional API integration resources, check out our [resource center](#). If you have questions, or would like to learn more about Cloud Elements, visit our [website](#) or [contact us](#).



# ABOUT CLOUD ELEMENTS

LEARN MORE AT  
[cloud-elements.com](https://cloud-elements.com)

Cloud Elements brings harmony to the world of APIs, allowing software providers to innovate faster and plug into digital ecosystems. The company's one-to-many virtualized API integration platform enables developers to unify thousands of APIs, build common data models for core business functions, and reduce the pain, cost, and complexity of integration. Founded in 2012, Cloud Elements is headquartered in Denver, Colorado, and serves customers worldwide.

Cloud Elements is now part of UiPath. [Learn more.](#)

# A BIG THANKS TO THIS YEAR'S RESPONDENTS

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