

Growing your business with APIs.



Mobile and digital technologies have changed the way we live. Consumers are doing business with all kinds of companies via apps and mobile devices. We expect to be able to shop, bank, book and plan our travel from the devices in the palms of our hands. Brands that offer seamless and intelligent experiences and personalized advice and recommendations are rewarded with consumer engagement and loyalty.

As digital engagement and expectations increase among consumers across industries, companies are under increasing pressure to improve efficiency, increase profitability and transform their value proposition in order to thrive in today's hyper-connected world. Having a viable digital strategy can make the difference between transforming your business and watching your competition capitalize on previously inconceivable opportunities. Application Programming Interfaces (APIs) play a foundational role in realizing that strategy.

But what is an API and how can it benefit a business?

An API: What is it?

If you've ever worn an activity tracker, used a social media app, bought anything online or requested a ride from your mobile device, you're already benefiting from APIs.

An API is a set of routines, protocols and tools for building software applications. They are typically used to expose data or services that can be consumed by other applications. Depending on their purpose, APIs can be used internally, with partners or made available to the general public.

This may not sound like something the average consumer cares about, but behind every mobile app and every modern online experience there is at least one API.

For example, when you fire up an app to request a ride from a car service and click "Yes" when prompted to allow access to your current location, the pin on the map is the result of an API call to a third-party map API. Once you've arrived at your destination and you pay for your ride with a click of a button in the app, you're also experiencing another API call to a payment service.

You can't touch or feel an API but it is the power that drives the app economy. They are quickly becoming the standard by which companies exchange data and build the smart, seamless, cross-channel experiences that consumers demand. They are the things that connect applications to each other and to the data that



power them; the thing that makes a company's data and services available to developers who create the apps and experiences of the digital economy.

APIs connect business processes, services, content and data to channel partners, internal teams and independent developers in an easy and secure way.

APIs have become more important as businesses shift their attention from what they need to provide to consumers to how to deliver more value to consumers faster and at scale. In addition to this accelerated time to value, businesses are striving for improved agility and the ability to leverage new channels and extend their brand. The API is the technology that enables the people in the digital value chain to unlock the value from backend systems and deliver the right experience at the right time to consumers, partners and employees.

Figure 1 illustrates the role that APIs can play, making it possible to easily connect differing sources of data and enable the digital value chain. Much like a physical value chain, where a series of actions takes place to deliver a product to market, the digital value chain connects users to apps to developers to APIs (and API teams) to enterprise data and services in the backend.

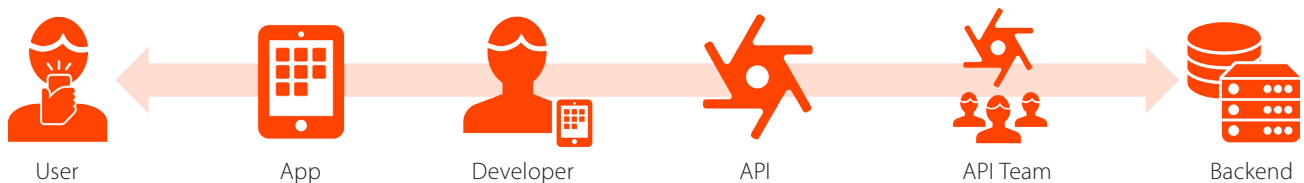


Figure 1: APIs at the heart of the digital value chain

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¹Accenture Technology Vision 2015 Survey, https://www.accenture.com/us-en/_acnmedia/Accenture/Conversion-Assets/Microsites/Documents11/Accenture-Technology-Vision-2015.pdf

What do APIs mean for business?

Companies in most industries are under pressure to respond to increasingly connected consumers with intelligent, personalized and delightful experiences.

It goes without saying that smart businesses align their strategies with consumers' and employees' changing habits and needs, but what is the right way to meet these new expectations? Many organizations recognize the trends, but do they all have a strategy to capitalize on the big shift?

APIs are the answer.

APIs open the door to agile innovation, improve the ability to adapt quickly to market changes and new competitors and create the opportunity to gather a wealth of data about products, systems, apps, app developers and users.

Risk of disruption.

Almost every industry is at risk of disruption by new entrants in the market that are born in the digital age. Often with only a handful of employees, these new companies drive massive volumes of digital interactions through their well-designed apps, well-executed social channels, and well-managed cloud operations.

Delivering seamless digital experiences through systems of engagement is what they're all about—it's second nature. These systems are their apps, both native and web, connected to data, external and internal, across any device. They can connect their apps and interactions with other, similar disruptive apps and experiences and create a virtual "app coalition" against the less-agile companies.

A traditional business is typically organized into units and departments. These entities often have different leadership and budgets, so it's easy to see how a brand can become fractured. This fracturing leads to inconsistent employee, partner and consumer experiences.

Does your company offer its consumers and partners very different experiences across their digital and physical properties? When a consumer walks into a store, does the business know what items that consumer has in their digital shopping cart? Is the time between ideation and getting an idea to market unacceptable?

If any of these scenarios resonates with you, your company may be missing the opportunity to provide a personalized consumer experience across channels. To capitalize on new opportunities, your company may need to overcome the challenges of legacy infrastructures as well as traditional organizational and development models and find ways to innovate at scale and at app-store speed.

Are financial service firms at a particular disadvantage?

Probably not more than companies in most industries. But according to leading industry researchers such as McKinsey Global Institute, the chief challenges for financial services firms competing against FinTech startups include outdated systems and tight coupling between systems of engagement (such as digital and mobile banking) and their systems of record.

APIs are key to enabling modern payment technologies in the future, but rigid infrastructures and tight coupling may still render financial services firms less agile than emerging FinTech firms. While embracing modern technologies can be challenging and time consuming—even for companies that have been around for a while—their competitive edge lies in the ability to leverage insights from their existing consumer base.

Data: A competitive advantage.

Established brands have assets that the newcomers don't: consumers, partners, suppliers and, in many cases, stores, warehouses and inventory. All of these assets translate into a company's single most precious asset: data.

It's a competitive advantage against the nimble startups. But to play that advantage, many established brands must first overcome the problem of the data about consumers, their history and any insights you might derive from them being inaccessible in real time to the new engagement and experience layer.

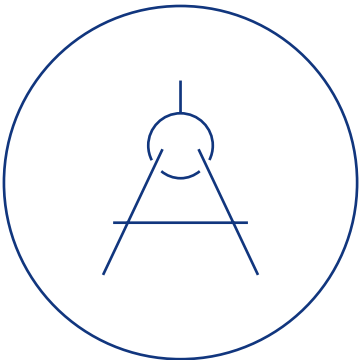
APIs don't just enable an enterprise to securely expose or project data. They also create a path for data to flow back to the enterprise.

They're critical for data analytics, because they give enterprises end-to-end visibility from the backend all the way to the mobile user. With an API, a company receives feedback and data that provide a powerful view of whomever is using an app, whether it's a consumer, a partner or an employee. Which developers or partners are using your API? How much traffic is moving on it? How is the API performing? How many purchases and downloads of your apps have occurred, and how many developers are building apps? All of these data streams can be captured and analyzed.

What goes into building an API strategy?

Many companies, including financial service firms, understand that there is value in their internal systems and data. They also see that it is imperative to participate in the digital economy in the same way as they did in the web economy during the past decade. These companies are responding with a multi-pronged API-first strategy. They are using APIs and API-based architectures to enable:

- Decoupling of systems of engagement from systems of record, providing the agility and speed necessary to deliver apps and experiences at app-store speed but maintaining security, control and reliability in the backend systems of record.
- Opening up to partners and developers, spurring innovation and reducing time to market. An app developer typically can't simply access a typical internal system at a Fortune 500 company. Providing this kind of access often requires a very deliberate, thoughtful and secure process on behalf of the business.
- Designing of products and services with increased emphasis on the consumer experience.
- Leveraging the data flow from apps and consumers and across lines of business to help build intelligent and personalized experiences.



With an understanding of how and why APIs enable digital business, the next question becomes: How does a business go about building an API strategy?

If you are new to APIs, it may be helpful to take a step back and remember the various market factors, your company's overarching strategy and other business considerations that will influence which API strategy is most appropriate.

Is your business seeking to connect with consumers, digitize and streamline internal business processes, create new channels to work with partners or all of the above?

In addition to asking these questions, here are a few things to keep in mind:

Remember your objectives	Think like consumers & look for the gap in your strategy	Embrace the legacy	Invest to shape the digital competition
It's important to develop clear digital strategies with an eye on transforming the business. Then build the skills of employees to realize those more agile and effective strategies.	Most organizations have great information about the products and services they offer. The savvy business will find ways to leverage their legacy systems and serve consumers in the hyper-connected world.	Your company is likely to have existing processes and systems that can be leveraged through APIs. One simple strategy is to extend existing services into new digital channels.	Growth strategies demand new approaches for attracting and retaining consumers with better offerings. Play out these new competitive dynamics on the consumer-facing side of the business, in sales, products or services, channels and experiences.
Focus on value	Find complementary partners	Lead change from the top	
The equation is simple. The difference between what consumers pay for a product or service and the perceived value of the product or service is referred to as surplus. Companies with a lot of consumer surplus win. Some value trends are convenience, customization, quality and brand reputation.	Third-party solution providers can plug specific capabilities gaps and help manage the drive toward transformation. They have expertise and resources needed to implement new strategies. Most firms use a partner for at least one component of their digital strategy.	A successful digital agenda starts with a company's leadership. Employees look to their leaders as technological advocates and an example of digital fluency. Executives should be able to articulate the value of digital technologies to the organization's future.	

Which API initiative is right for your business?

Awareness of the various business considerations will allow you to better understand your organization's API needs. There are several flavors of API initiatives that support the digital economy, and an understanding of the different kinds of API models is critical to selecting the right API initiative for your business.

To determine which is most suitable for your organization, consider also whether the app developer resides within your business, within a partner's company or works independently ("in the wild"). The role you want developers to fill helps determine which API initiatives come into play: internal, partner or public.

Getting the right mix of API program scenarios can push an enterprise toward becoming a robust platform for innovation that enables it to compete in a world of new expectations and compelling opportunities, speeding it on its way to digital transformation.

Internal APIs for business agility and flexibility.

An internal API program can open up collaboration and innovation inside your company.

Often, demand for an internal API program is driven by the need for agility and a desire to build mobile apps and experiences or portals to handle internal business processes.

Legacy IT systems tend to be stable, but also slow moving, and sometimes can't easily keep up with market evolution. By putting APIs between IT systems and apps, agility and flexibility result while still enabling a business to take advantage of the underlying stable system.

Partner APIs for collaboration and business development.

A partner API program can open up secure collaboration and innovation with partners, helping a business deliver on new business-development opportunities with consumers and partners.

Partnering using APIs can create new channels, help partner organizations to expand a company's value proposition into an adjacent business, or complete a company's offering. The most obvious way of partnering using APIs is creating new channels. Netflix is a classic example of a company that transitioned from a mail-order DVD provider to an online streaming media system.

The company's API partner initiative resulted in popular Netflix-integrated applications for the web, desktops, mobile devices and TV.

A strategic partner can use an enterprise's value proposition or core offering to strategically expand its footprint or complete a product offering. There are many cases across industries (such as the weather and the financial industries) in which APIs have facilitated this kind of expansion.

APIs also enable deep visibility into business interactions with partners that can help inform and refine partner strategies.

Public APIs for breakthrough innovation.

A public API program can build and inspire a broad ecosystem of app developers who create new experiences and apps that make big breakthroughs. Public APIs are a well-known paradigm given the success of companies like Twitter, Foursquare and Facebook.

Public APIs are sometimes called "open APIs" since they are a more open way of utilizing and sharing APIs with other companies and/or consumers. Businesses will choose to use public APIs depending on their goals and the amount of information they are comfortable making accessible to the general public.



How do you start leveraging APIs now?

After you have defined the appropriate API strategy for your business, you can embrace your organization's legacy and adopt APIs. You'll want to follow these 6 steps to get started:



Step 1 Define the API

The first thing to do is determine what data and processes will be exposed via your API, and how you can make its design consumer-centric.



Step 2 Map the API to your legacy systems

The next step to realizing a functional API is to map the data elements and functionality of the new API to existing systems, whether these are databases, ERPs, internal APIs, etc.



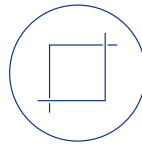
Step 3 Implement the integration layer

There are several approaches to implementing an API. If the goal is to extend existing legacy data and processes, then this is about system integration rather than new app development.



Step 4 Implement security

Since APIs expose your company's chosen data and functionality, security is paramount. Security should be built into the APIs themselves, but threat protection, identity services, infrastructure security and compliance must also be considered.



Step 5 Scale to fit

You don't want a sudden surge in the use of your API to bring down your backend systems, so it's important to always be aware of transaction volume.



Step 6 Document the API

Typically, a well-designed API is relatively self-explanatory, but additional documentation within the schema is very helpful to third-party business partners, system integrators, mobile application developers, etc.

Summary

APIs have become a foundational technology that enables businesses to participate in the digital economy. There's a reason why they are becoming part of the everyday lexicon and why more and more companies are incorporating them.

They are versatile, enabling businesses to securely expose content or services to internal or external audiences.

They help enterprises across industries unlock the value of existing data and services and transform their businesses to operate at the speed and scale of the digital economy.

They help businesses deliver intelligent and connected digital experiences to customers, partners and employees; accelerate multichannel strategies; improve internal processes, and even develop entirely new business models.

Combined with your legacy systems and enterprise assets, APIs can help you win, serve and retain consumers.

About this document

This white paper is a collaborative effort between Visa and Apigee. The content represents a perspective and a collection of best practices about how to become a digital business, based on the learnings from customers, partners and some of the leading API teams around the world.

About Visa

Visa Inc. is a global payments technology company that connects consumers, businesses, financial institutions and governments in more than 200 countries and territories to fast, secure and reliable electronic payments. We operate one of the world's most advanced processing networks—VisaNet—that is capable of handling more than 65,000 transaction messages a second, with fraud protection for consumers and assured payment for merchants. Visa is not a bank and does not issue cards, extend credit or set rates and fees for consumers. Visa's innovations, however, enable its financial institution customers to offer consumers more choices: pay now with debit, ahead of time with prepaid or later with credit products. For more information, visit usa.visa.com/about-visa, visacorporate.tumblr.com and [@VisaNews](https://twitter.com/VisaNews).

About Apigee

Apigee delivers an intelligent API platform to accelerate the pace of digital business. We help companies – from disruptive start-ups to the Fortune 100 – use their enterprise data and services to create connected digital experiences for customers, partners and employees. This is digital business.

APIs are the foundational technology for digital business. Behind every smartphone, mobile app and connected experience is at least one API – and APIs need to be managed, secured, analyzed and scaled. That's what we do. Apigee helps businesses use APIs to securely share data and services across myriad devices and channels.

Many of the world's largest organizations choose Apigee to enable their digital business, including 20 of the Fortune 100, 5 of the top 10 Global 2000 retail brands and 6 of the top 10 global telecommunications companies. For more information, visit apigee.com.