

The API Value Chain

APIs provide a means to expose business assets to the end user. To understand the API value chain, you need to understand what is happening when an API is being advanced by a business and identify the actors involved at each step (see Figure 1-4).



Figure 1-4. API value chain

The *business asset* marks the beginning of the API value chain. The business identifies the asset and its value and decides to make it available for others to use. The business asset can be any data or business functionality. It can range from product catalogs, to customer information, to Twitter feeds, to postal tracking information, to payment and banking services. The value derived through the use of the asset depends on multiple factors. The following questions might help understand the value of the asset:

- What business asset is being exposed as an API and what is the value to its owner?
- What benefits would the provider get by creating a channel for using the assets via API?
- Who are the potential users of the asset and how would the end users get access to the assets?
- What benefits would the end user get by the using the asset? Of what potential value could these assets be to the others?
- How easily can the end user access and use it?

The value of the asset determines the success of the API. Exposing the assets to others should also benefit the owner.

Once an asset has been identified, the next step is to create an API to expose the business assets. The **API provider's** job is to design the API so that it can be used easily by the intended audience. In most cases, the asset owners are themselves the API provider. In this case, the benefits of the API flow directly to the asset owner. But in some cases, the owner may have an agreement with another organization to create APIs to expose its assets. In such cases, the rewards get distributed between the asset owner and the API provider.

The **app developers** then assess the APIs and create apps using them. Developers can be an individual entity or a group belonging to an organization. If they belong to an organization, they are sometimes referred to as *company developers*.

The **apps** created by the developers can be mobile apps or web apps. These apps should be made available to the end user in order to add value to the business. An app store is the most popular channel for distribution. But there may also be other channels for distribution and marketing. Apps can be either freely downloadable or paid.

The **end users** are the final actor in the API value chain. They are the users of the app. They can use the app on their mobile devices, smartphones, tablets, iPhones, or desktops, or from other connected devices, such as connected cars, kiosks, and so forth.

The success of the API strategy depends on the various links in the API value chain. It depends on the involvement and commitment of the key stakeholders in the value chain. It is important to get them all involved for the success of your API. There has to be a proper handshake among all the stakeholders. The API provider needs to understand the value of the business asset and decide on the best interface to expose it. The developer has to understand the business asset and its interface, and create an app that meets the needs of the end user and adds value for them. All the stakeholders should understand the core business needs and the value for creating the API. The app built using the API should be easy to use, and its purpose and value should be easily understood by the average person. Only then can the API strategy be successful.

Business Models for APIs

APIs form the foundation of digital business. The business model to adopt depends on the asset being exposed as an API. The asset can be the *data*, the *business logic*, or the *presentation*. Some of the business drivers for building APIs include (but are not limited to) the following:

- Growing new business capabilities and opportunities
- Opening new marketing channels and lines of business
- Improving customer reach and loyalty
- Innovating at the edge of business
- Accelerating time to market
- Advancing operational efficiency and control
- Driving traffic and accelerate internal projects

As APIs help to drive business agility, growth and open new channels for revenue, there are many business models for API exposure. The model to choose from depends on the business goals of the API provider. Depending on the goals, a provider may choose to adopt an available API business model. The business model can be free, developer pays, and developer gets paid or indirect. Details on the various monetization models are discussed later in the book.

CHAPTER 2



API Management

Customers today want to have access to enterprise data and services through a variety of digital devices and channels. To meet customer expectations, enterprises need to open their assets in an agile, flexible, secure, and scalable manner. APIs form the window into an enterprise's data and services. They allow applications to easily communicate with each other using a lightweight protocol like HTTP. Developers use APIs to write applications that interact with the back-end system. Once an API has been created, it needs to be managed using an *API management platform*. An API management platform helps an organization publish APIs to internal, partner, and external developers to unlock the unique potential of their assets. It provides the core capabilities to ensure a successful API program through developer engagement, business insights, analytics, security, and protection. An API management platform helps business accelerate outreach across digital channels, drive partner adoption, monetize digital assets, and provide analytics to optimize investments in digital transformation (see Figure 2-1).

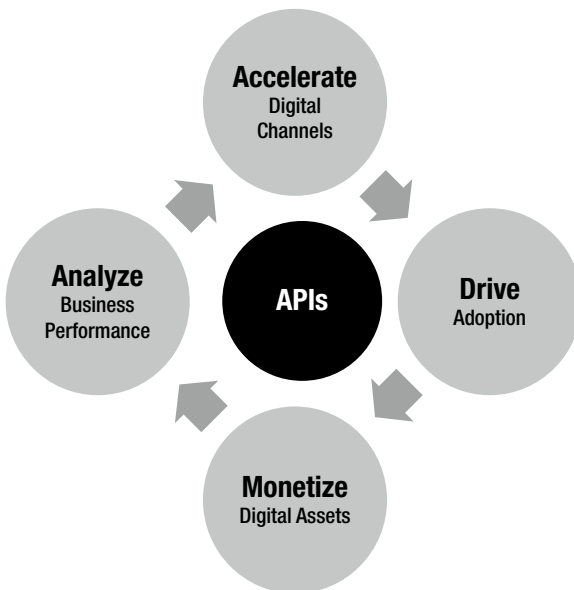


Figure 2-1. API management offerings

An API management platform enables you to create, analyze, and manage APIs in a secure and scalable environment (see Figure 2-2). An API management platform should provide the following capabilities:

- Developer Enablement for APIs
- Secure, Reliable and Flexible Communications
- API lifecycle Management
- API Auditing, Logging and Analytics

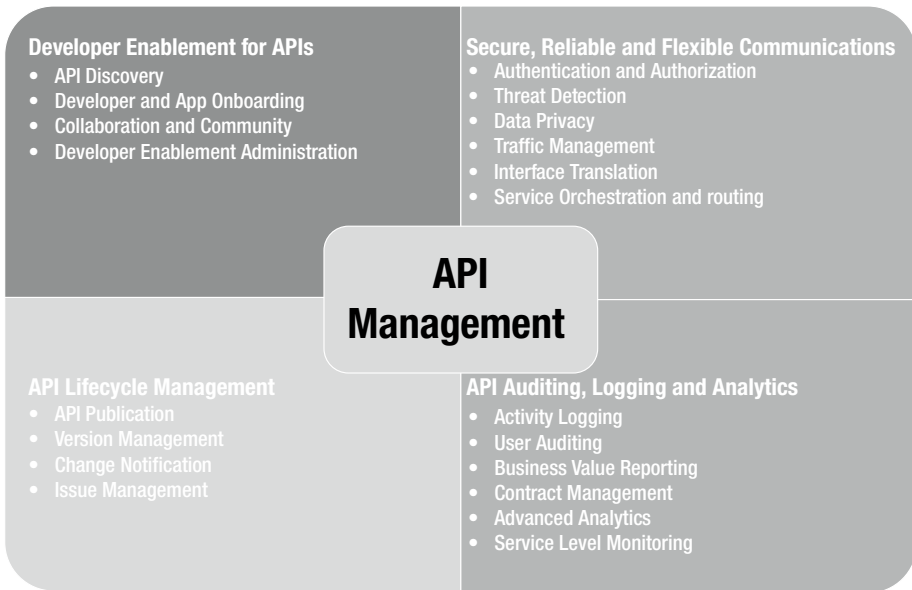


Figure 2-2. API management capabilities

API management capabilities can be delivered by any API management vendor in a public cloud as a hosted service or can be deployed on-premise in a private cloud. A hybrid approach can also be followed, with some components of the API management platform being offered as a hosted solution and others deployed on-premise for increased security and control.

An API management platform provides these capabilities as three major types of services (and as illustrated in Figure 2-3):

- **API gateway services** allow you to create and manage APIs from existing data and services. They allow you to add security, traffic management, interface translation, orchestration, and routing capabilities into your API.

- **Analytics services** monitor traffic from individual apps and provide business with insight and operational metrics, API and app performance, and developer engagement metrics.
- **Developer portals** provide capabilities for developer and app registration and onboarding, API documentation, community management, and API monetization.

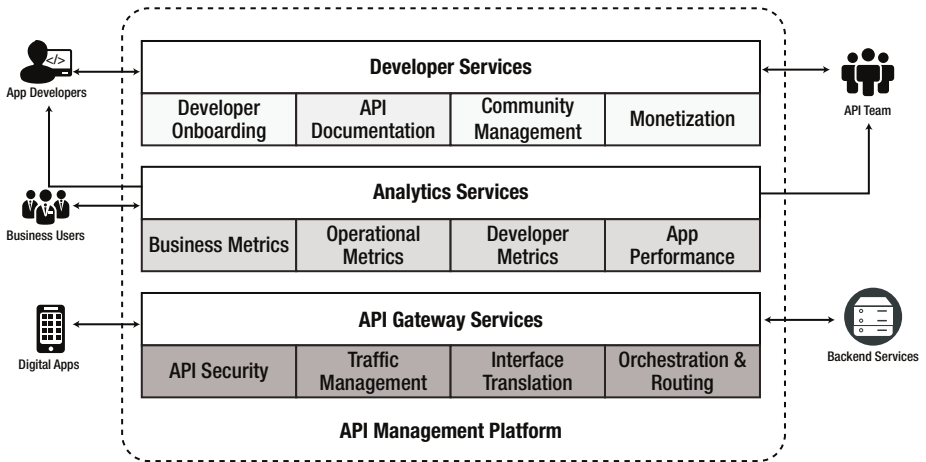


Figure 2-3. API management platform services

This chapter introduces you to the different capabilities required for an API management platform and shows how the different services provided by the platform help enable these capabilities. In the process, it also introduces the various concepts and technologies for API management.

Secure, Reliable, and Flexible Communication

APIs help digital apps to communicate with back-end services. Communication forms the core of APIs. Communication can use REST, SOAP, Plain Old XML (POX), or any other protocol of choice. REST is by far the most preferred communication protocol for APIs due to its inherent characteristics, which are described later in this book. An API management platform must provide a framework that allows secure, reliable, and flexible channels of communication. The *API gateway* within the API management platform provides the services that form the core capabilities required for API communications.