

HCL

Building Digital Ecosystem Strategy with APIGEE



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Genesis of Ecosystem strategy

We are seeing increased adoption of digital ecosystem consisting of internal solutions, applications, and systems, along with external partners, suppliers, customers, third-party data service providers, and all their respective technologies.



It's no brainer to acknowledge that digital ecosystem is fueling digital transformation across industry segments. Be it application integration or enterprise integration the success mantra is to have an effective integration strategy to create the foundation of your digital transformation roadmap.

Connected Digital ecosystems are necessary to build connection, drive transformation, improve business outcomes and create new possibilities which never existed. It's important that while embarking on your digital transformation journey you are leveraging API as the foundation to build a digital ecosystem.

An integrated digital ecosystem enables organizations to create end-to-end business flows from the "outside-in" by combining B2B, application, and data integrations to the entire business network.

Some of the great examples to quote is how the Mobile app aggregators in their space are leveraging the partner ecosystem and offering products which are not part of their core business but as a great value add for their end consumers.

We will continue to see the momentum growing here and more and more partners getting integrated as part of a wider private or public digital ecosystem.

APIs for Application modernization

An effective ecosystem strategy is always led by API and App Modernization and will enable enterprises to orchestrate business processes more efficiently as the backend implementation. Some of the immediate benefit of ecosystem strategy will be:



Create new source of revenue

Digital ecosystems drive new revenue streams through consolidated ecosystem integration, with which organizations can track and analyze comprehensive data flowing through the business and use it to create new products and services.



Cost optimization through optimized business processes

While improving workflow efficiency, end-to-end integration improves the working relationships with customers and partners and reduces operational costs due to automated data processes and business-wide efficiency.



Accelerate speed of technology adoption

An ecosystem integration strategy enables enterprises to fully embrace new technology which was previously difficult to adopt. Now, companies can take advantage of modern cloud native services and SaaS solutions rather than rely on outdated legacy software that cannot keep up with the pace of the enterprise today.



Data Monetization

Ecosystem strategy has opened new avenues of leveraging data to create new sophisticated offerings and data monetization is clearly visible across industries like insurance where they are using data coming out from Automobile sensors to create customizable insurance policies.

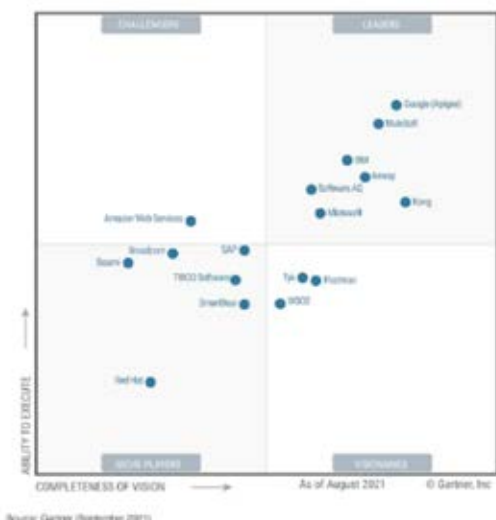


Competitive advantage

As data is new currency, APIs are new products and more diverse is your portfolio with API products the better you are positioned to address competition.

Google Apigee Nextgen platform for building digital ecosystem

Figure 1: Magic Quadrant for Full Life Cycle API Management



Google (Apigee) cited as a leader in the 2021 Gartner Magic Quadrant for Full Life Cycle API Management. This is the sixth time in a row that Google (Apigee) has been named a Leader. Apigee positioned Top among all vendors for its ability to execute and completeness of vision.

Apigee is a Cross-Cloud platform for developing and managing APIs by fronting services with a proxy layer. Apigee provides an abstraction or facade for your backend service APIs and provides security, rate limiting, quotas, analytics, and more.

Apigee is a Cross-Cloud Integration Platform and supports all the 3 deployment options - SaaS, Hybrid and on-premises.

Apigee X - SaaS on Google Cloud

Apigee Hybrid - A good hybrid integration platform is the foundation for connected intelligence. Apigee management plane on GCP while Apigee Runtime Plane deployed on-Premises or any other cloud AKS, EKS and Open Shift.

Apigee OPDK (On-Premises Development Kit) - Both Management plane and Runtime On-Premise

Google Apigee Core capabilities

Multi-layer security - API level and Network level with Authentication as a Service

01

Apigee X provides OAuth (Open Authorization), API keys, role-based access and many other API-level security features.

02

Cloud Armor offers network and application security such as DDoS (Distributed Denial of Service) protection, geo-fencing, mitigation of OWASP (Open Web Application Security Project) Top 10 risks, and custom Layer-7 filtering.

03

Cloud Identity and Access Management (IAM) for authenticating and authorizing access to the Apigee platform as well as to gain more control over encrypted data with customer-managed encryption keys (CMEK).

04

With Apigee X and Cloud Armor and Cloud IAM developers enjoy integrated, out-of-the-box security capabilities to protect their APIs at multiple levels.

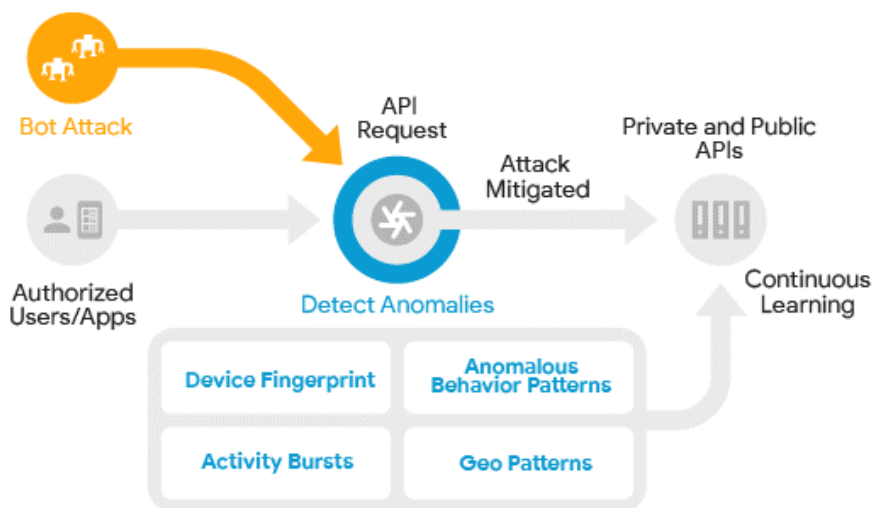


A complete intelligent security solution

Apigee X provides end-to-end security across all components of the API management platform.

Proactively address business priorities and security needs for data protection, threat detection, access control, identity management, and governance.

Apigee services are third-party audited, compliant, and certified for PCI DSS, SOC1, and SOC2.



Mediation Engine for Access, Security, and Control

Manage interactions with API consumers to optimize performance

Transform, translate and reformat data for easy consumption



Secure APIs and protect back end systems from attack

Extend with programming when you need it

A complete intelligent security solution



Google Advantage

Leveraging the best of Google technologies such as Data Flow, Pub/Sub, Stackdriver, Bigtable, and BigQuery, Apigee API monitoring is highly scalable, can compute complex metrics at scale, process data efficiently and asynchronously, and reduce API call processing overhead.

Getting Started

Apigee API Monitoring is currently available to Apigee Edge Public Cloud Enterprise customers.

Integrated Monitoring

Apigee API monitoring is completely integrated with Apigee Edge Cloud platform. It provides in-depth insights into API availability and performance metrics. Users can drill-down into granular level details such as latencies and errors caused by proxies and backend targets.

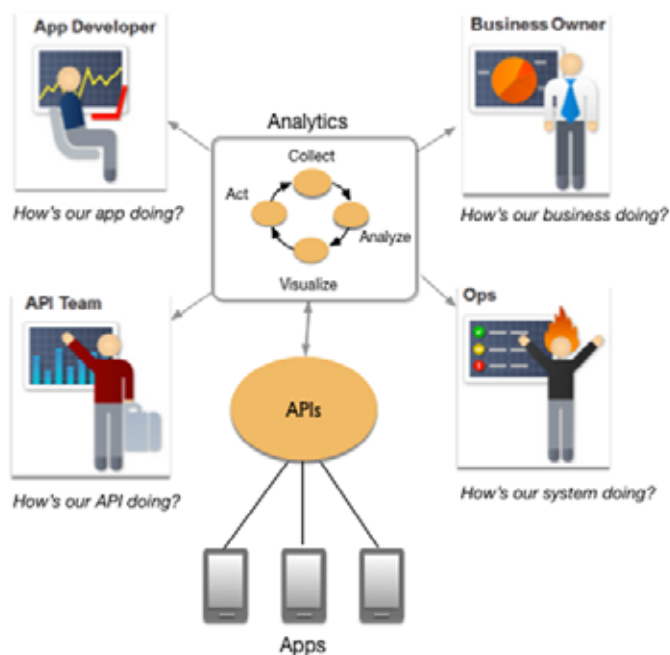
Precision Diagnosis

Apigee API monitoring helps operations teams quickly investigate API issues in a single click without toggling multiple tools and correlating debug sessions. Users can precisely diagnose the source of error - developer application, proxy layer or backend target. It also provides tree-map views for NOC teams to visualize issues.

Contextual Insights

Apigee API monitoring equips users to take appropriate actions in the context of the issue being investigated. It also facilitates grouping of proxies and targets to monitor business critical APIs. Alerts are supported by your webhooks and other channels such as Slack, PagerDuty, or email.

APIGEE Operations - API Analytics



API Team

The API team is tapping into internal systems to create interesting APIs. The API team wants to know how the API program is doing overall, how individual APIs are doing, and how to improve their APIs.

API Developers

By sharing analytics information with app developers, you get better apps. These developers are innovating with your API and building creative apps that help drive revenue to your enterprise. Analytics help app developers know how their apps are doing and how much they are contributing to the bottom line of your enterprise. App developers want to know how they can improve their apps.

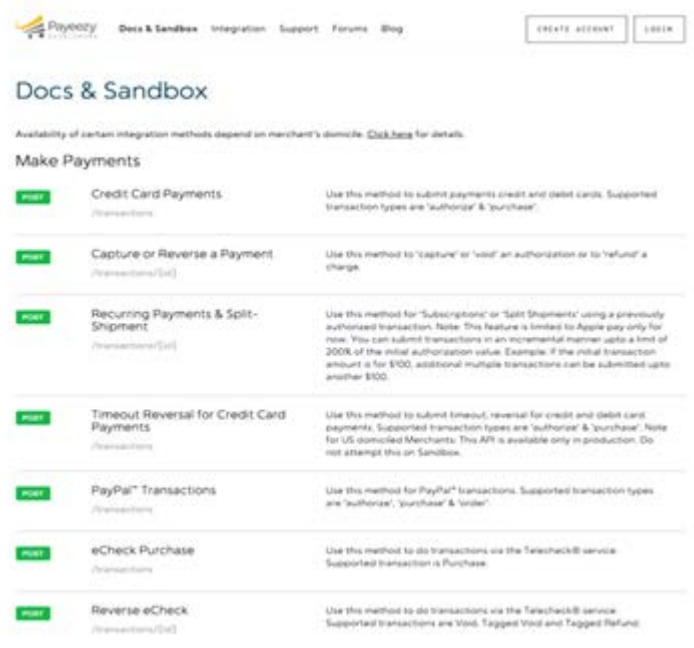
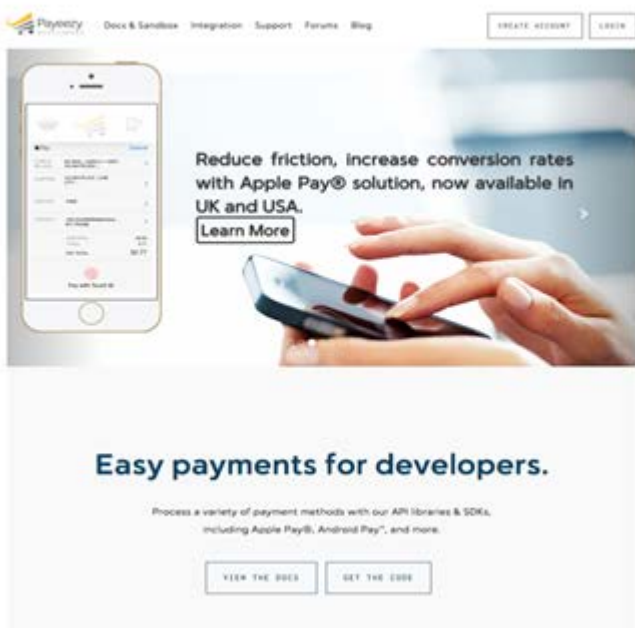
Ops Team

The operations team wants to understand traffic patterns and anticipate when to add backend resources or make other critical adjustments.

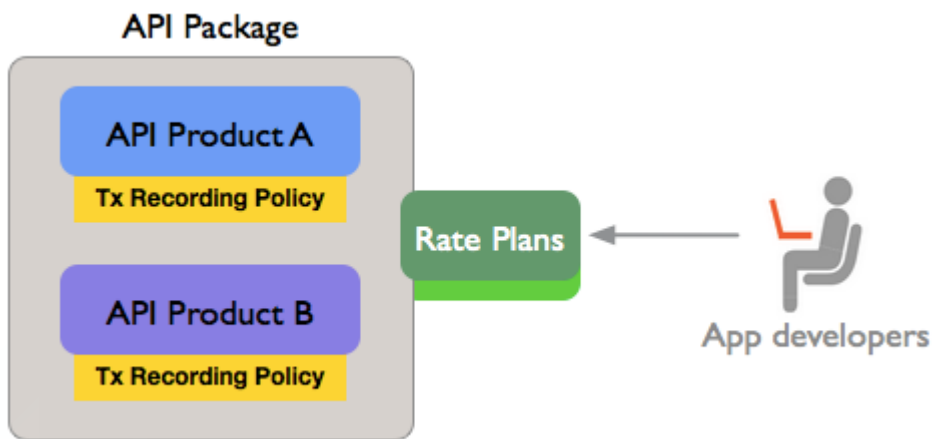
Business Owner

The business owner wants to see how their API investment is paying off and where to invest API dollars in the future.

APIGEE Developer Portal for Customer & Partners Engagement



Digital Ecosystem needs an easy-to-use and flexible way to monetize your APIs so that you can generate revenue for the use of your APIs by your customers and partners. Using monetization in Apigee, you can create a variety of monetization plans that charge developers (or pay them through revenue sharing) for the use of your APIs.



Use case: Building data as a service using Apigee for a retail client

HCL developed data-as-a-service solution leveraging PaaS and Serverless capabilities on GCP along with APIGEE.

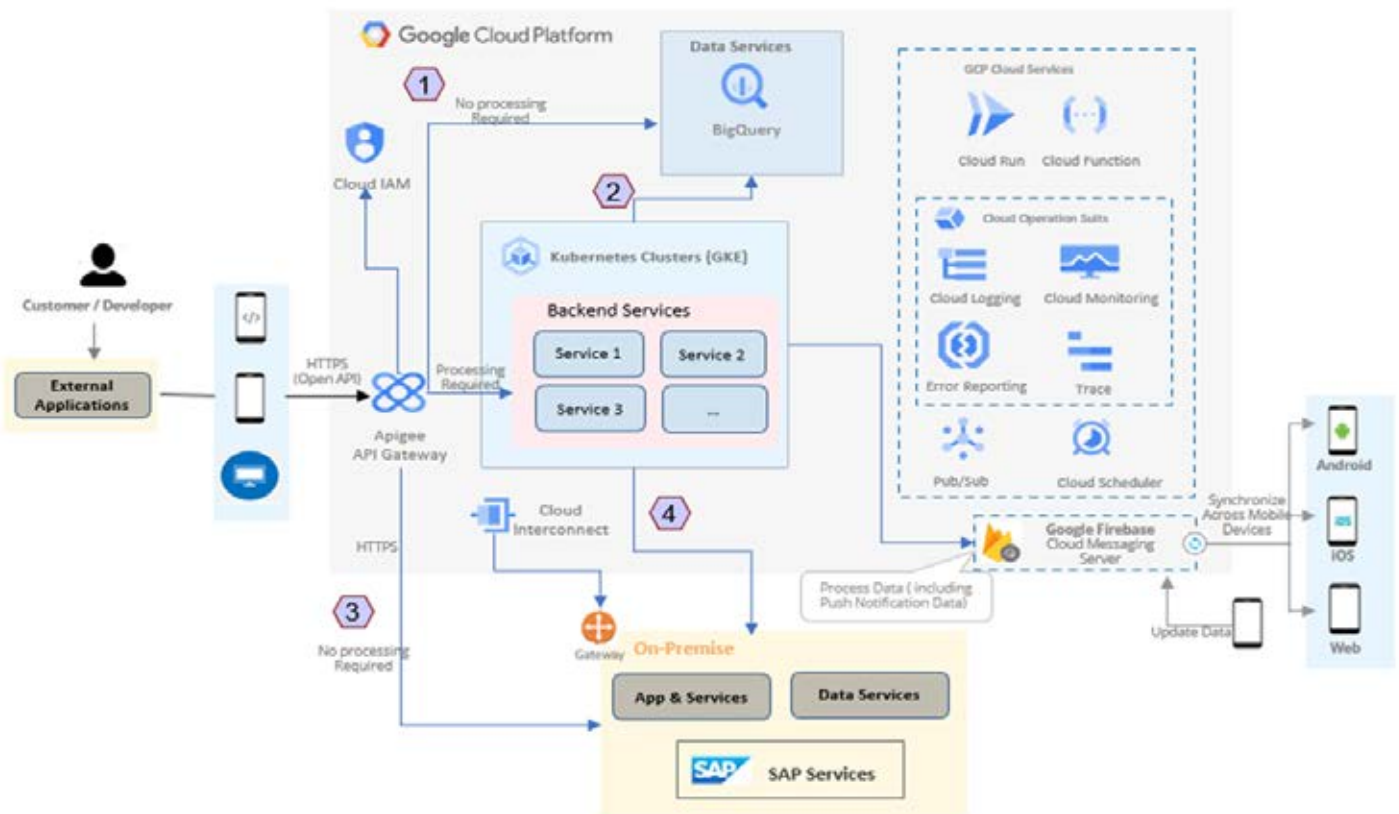
Microservices implemented on GKE or serverless Google Run

Cloud Pub/Sub for any in-bound or out-bound messaging and notifications

Firebase Cloud Messaging (FCM) used for push notification and data synchronization across mobile devices

Cloud Interconnect for GCP Cloud platform connectivity with client on-premises services

Apigee to perform transformation, apply security, traffic management, caching, integrate with backend services and provides customer/partners engagement with decentralization of services adoption



Pitfalls to keep in mind while building API strategy

Some of the common mistakes which we have observed across different clients are:

01

Technology modernization vs. Business Function Modernization

02

Lack of awareness on the benefits of digital ecosystem strategy

03

Organizational resistance to change

04

Lack of skills & teams which can champion this

05

Inability to scale and take advantage of creating new revenue stream



In order to overcome these challenges, it is recommended that institutions of higher learning incorporate Digital Ecosystems into their curriculum, create awareness of the benefits of Digital Ecosystems and provide specialized training to current employees in enterprises.

For example, I will cite the challenges we had while doing an engagement for one of the large Telco:



Disjointed customer experience across channels

Limited insights on customer actions, journey and behavior across channels

Independent and scattered enterprise applications across marketing, transactions and retail system

HCL proposed API first solution using Apigee and it resulted in:

Setup of API marketplace that enables consistent/ standardized ways of interaction between producers & consumers of APIs

Implemented Marketplace Publisher for API owners to manage their APIs, add meta data, promote and publish APIs to API marketplace with self-provisioning tools

Accelerated delivery with enhanced features like Self Service, Automatic Code Generator etc

Self-Servicing Capabilities & Simplified End-user Journeys

Building your ecosystem strategy with hybrid integration platform

API-led Hybrid Integration Platform is foundation of a Successful Digital Business Initiative

Speed of innovation is the new benchmark of success in today's digital business landscape. To keep pace, businesses need to empower users across the organization and increase the agility of the IT team. To do this, businesses need a system that enables them to identify opportunities and solve problems by connecting from APIS and system to devices and people, we interconnect everything, capture data in real time wherever it is, and augment the intelligence of your business through analytical insights.

Gartner* says "Modern integration is pervasive: The integration issue is not confined to a narrow set of use cases within an organization's four walls. Integration is now pervasive because it empowers many aspects of the digital transformation journey, including ecosystems and the API economy.

To support these new pressures, top innovators are adopting hybrid integration platforms (HIP) that support a variety of use cases. A good hybrid integration platform is the foundation for connected intelligence.

To stay competitive, you need to make sure that your integration solution supports this new business model by connecting everyone to everything, enabling you to achieve connected intelligence.



HCL

HCL Technologies (HCL) empowers global enterprises with technology for the next decade today. HCL's Mode 1-2-3 strategy, through its deep-domain industry expertise, customer-centricity and entrepreneurial culture of ideapreneurship™ enables businesses to transform into next-gen enterprises.

HCL offers its services and products through three lines of business - IT and Business Services (ITBS), Engineering and R&D Services (ERS), and Products & Platforms (P&P). ITBS enables global enterprises to transform their businesses through offerings in areas of Applications, Infrastructure, Digital Process Operations, and next generation digital transformation solutions. ERS offers engineering services and solutions in all aspects of product development and platform engineering while under P&P. HCL provides modernized software products to global clients for their technology and industry specific requirements. Through its cutting-edge co-innovation labs, global delivery capabilities, and broad global network, HCL delivers holistic services in various industry verticals, categorized under Financial Services, Manufacturing, Technology & Services, Telecom & Media, Retail & CPG, Life Sciences, and Healthcare and Public Services.

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