Whitepaper

Asset Monetization Powered by API Economy

Abstract

Application programming interfaces (APIs) are not new. They provide seamless, inter-operable, real-time, and always-on mechanisms for ecosystem collaboration. In today's landscape, financial institutions are co-dependent on other partner organizations to provide innovative and readily consumable services to their customers. In this context, APIs have acted as catalysts for new digital business models by enabling financial enterprises a means to generate additional revenue from customers for access to their digital services. The API-first mindset allows financial institutions to rapidly innovate and create new services/products through integration with partner organizations. API-first mindset also helps in providing highly personalized lifestyle solutions to customers, instead of purely financial solutions. To sweat their current assets and investments, financial institutions are keenly focused on creating API-economy, which involves not only design and build APIs but also monetizing them by fueling consumption. This paradigm of extracting higher economic value from APIs is often termed as API economy.

As reported by Finastra, the overall banking as a service(BAAS) market opportunity is valued at US $7 trillion.

As the digital ecosystem within financial services continues to expand, it becomes imperative for businesses to adopt a strategic approach to API economy. This approach must also address critical factors such as security, governance, and high availability without disruptions. Besides, the approach should lead to creation of an appropriate API marketplace. A marketplace provides a ready-to-use platform to easily learn, consume and integrate APIs. In this whitepaper, we delve into the intricacies of unlocking revenue streams through API monetization within the dynamic realm of banking and financial services.

Key Takeaways

- API-enabled Connected Experiences
- API Monetization
- API Ecosystem
- API Marketplace
- API Governance
- API Monetization Models
- Partner-driven Monetization of Assets

Introduction

In today's dynamic digital economy characterized by unprecedented continuous change, the ability to adapt, innovate and differentiate has become the key to success. Post COVID-19, many financial enterprises have accelerated the digitalization of the business services provided by them. API led transformation has gained traction and been adopted by many of the financial institutions as an enterprise digital transformation strategy.

According to Allied Market Research, API banking market will reach $217.3 billion, globally, by 2032 at 24.7% CAGR.

Primarily being viewed by most of the organizations solely through the lens of integration, APIs have evolved into a product strategy that can realize monetary benefits for financial institutions.

In today's digital era, API has emerged as a powerful tool for businesses to monetize their products and services by exposing their functionality systems, processes, and data to external users.

More than 90 percent of financial institutions use or plan to use APIs to generate additional revenue among existing customers, as stated by McKinsey.

These APIs are consumed on a chargeable basis and potentially a revenue stream for both themselves and their business partners. This shift has led to the creation of standalone value and the ability to blend multiple APIs to fuel innovative business models. The ripple effect of this phenomenon has given rise to what we now call the API economy, reshaping how organizations across sectors operate. To facilitate this transformation, organizations have established API marketplaces, where producers and consumers can come together, fostering mutual benefit. With the cost of owning and maintaining an API landscape rising, an increasing number of organizations are beginning to treat APIs more like products to extract value from their API investments.

By curating a portfolio of business capabilities offered as APIs, organizations can address diverse needs for both internal and external stakeholders, accelerating delivery and driving innovation. In this new era of democratized self-services, organizations that solely view APIs as integration tools risk being left behind. Embracing APIs as strategic assets for monetization is the key to thriving in the BFS sector's evolving landscape.

API-enabled Digital Ecosystem

In a digital economy, leveraging APIs to onboard new partnerships will serve as the cornerstone of what is commonly regarded as the next iteration of business development and income production. For organizations selling digital services, APIs are essential to build an ecosystem to allow fintechs and partners to access and integrate functions. This document covers the tenets for monetization of APIs.

APEJ banks are prioritizing the enablement of third-party integration and innovating corporate banking products, as reported by API - IDC.

Productization of API's

Monetization APIs need a product mindset and strategic vision. Productization aligns your APIs with the purpose and value your customer is trying to derive. API productization is not just about making software available through a developer portal, it's the process of packaging APIs into a solution with a robust product-market fit that solves a business problem. The APIs need to be consumable in a fully independent manner. Self-service, ease of use, and singularity should be the driving elements of API productization. These aspects not only democratize access but also empower teams. For example, banks exposing wire processing capabilities as API's to fintech's for payment processing and reconciliation. The fintech's don't need to have a direct relationship with central banks and can leverage this to process payments for their clients.

| Purpose of API | API Design | Follow Lifecycle | Evaluate Customer Experince | Learn & Adapt |

It's also important to define and measure KPI's to ensure that the objectives of the product are being met and take corrective actions for the business objective.

Some of the sample s OKR's for API monetization

- New revenue gained through APIs (sales, new clients)

- New customer sign-ups via API channel

- Customer experience (customer satisfaction, NPS   score, churn rate)

- Ease of use (seamless, onboarding process and time, time to market)

API Management Platform & Marketplace

In the realm of API monetization, a robust API management platform is pivotal for long-term scalability during the digital transformation journey. This platform serves as the foundation for creating, overseeing, and managing APIs, enhancing composability, security, and business agility while expediting development. API platform should possess these capabilities for seamless development.

- **An API gateway:** This provides or integrates with third-party gateways for runtime management, security, policy enforcement, throttling, operational control and usage monitoring for APIs.

- **A developer portal:** This provides a self-service catalog of APIs for enabling, marketing to, and governing ecosystems of developers who produce and consume APIs.

- **Policy management and analytics:** These provide security configuration, API mediation and API usage analytics, business KPIs with analytics and dashboards

- **Developer Studio:** (API design and development): These capabilities deliver a meaningful developer experience and tools to design and build APIs, and to enable API usage for existing systems.

- **API Governance:** Version management, lifecycle management, API metering, billing, and monetization.

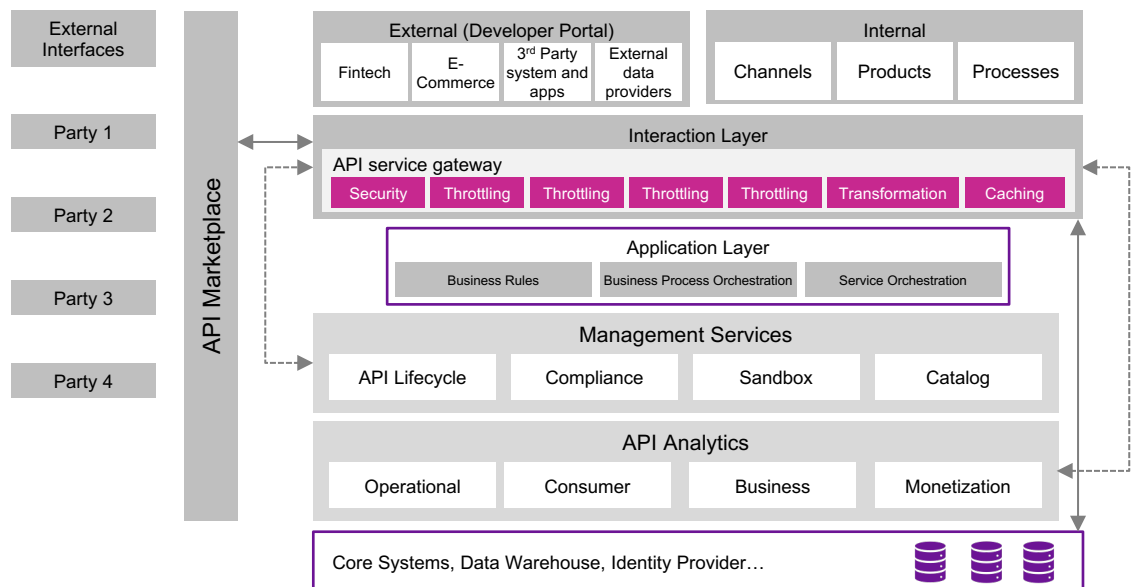- **DevSecOps Pipeline:** Deploy and manage, integrated testing in pipeline.

External Interfaces		External (Developer Portal)					Internal		
		Fintech	E-Commerce	3rd Party system and apps	External data providers		Channels	Products	Processes

Interaction Layer

API service gateway

| Security | Throttling | Throttling | Throttling | Throttling | Transformation | Caching |

Application Layer

| Business Rules | Business Process Orchestration | Service Orchestration |

Management Services

| API Lifecycle | Compliance | Sandbox | Catalog |

API Analytics

| Operational | Consumer | Business | Monetization |

Core Systems, Data Warehouse, Identity Provider…

Party 1 · Party 2 · Party 3 · Party 4 · API Marketplace

Figure 1: Sample View of API platform Implementation with marketplace

Success story for a large global bank: The APIs for treasury services for a large bank allow clients to integrate seamlessly to access a growing number of solutions directly from their treasury workstations or ERP of choice. It covers 83 APIs for both data-driven services and transactions. Some popular API calls include account balance inquiries, payment status reports, requesting FX rates and booking FX contracts.
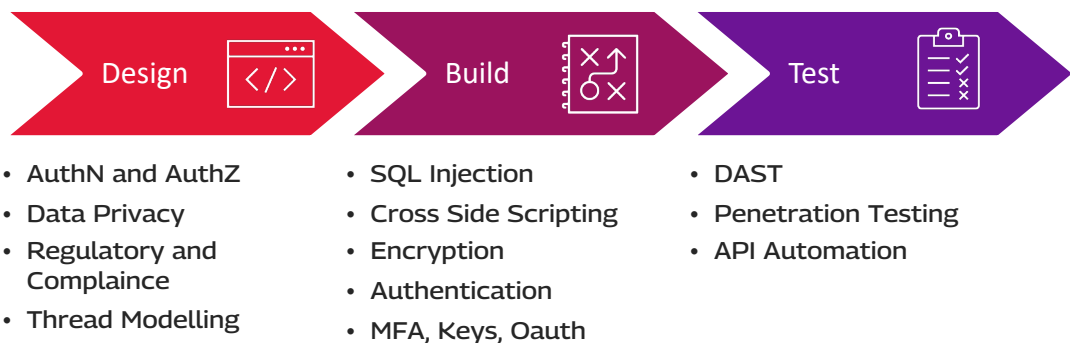
Infrastructure

After selecting the appropriate API platform, it's equally important to choose the appropriate infrastructure strategy. Even the best platforms won't scale and won't be able to handle the anticipated technological future if the infrastructure is not robust. In a cloud prominent digital infrastructure most of the banks are adopting cloud (public vs hybrid vs private cloud). The infrastructure should include:

- Ability to scale and descale seamlessly
- Disaster recovery capabilities
- Ability to provide high availability
- Monitoring and heath check
- Complaint to regulatory needs (Localization, DORA)

API Security

In the context of the banking and financial services, ensuring robust API security is paramount. With APIs serving as the gateway to your network or application, they play a critical role in safeguarding sensitive financial data. Organizations, breached by the entities they entrusted or due to their vulnerabilities, have now opted for the zero-trust model. It implies that no human or computer will be able to access a resource until authorized. And even when the authorization is done, threat monitoring and prevention will remain essential for the network. Opting for the above approach is required because APIs face unlimited threats every day. Cybersecurity strategy, revolving around authentication, authorization, and threat prevention can safeguard your APIs well. To fortify API security effectively, it is essential to integrate these measures seamlessly into a well-established DevOps process throughout the development lifecycle.

Design	Build	Test
• AuthN and AuthZ	• SQL Injection	• DAST
• Data Privacy	• Cross Side Scripting	• Penetration Testing
• Regulatory and Complaince	• Encryption	• API Automation
• Thread Modelling	• Authentication	
	• MFA, Keys, Oauth	

One another key point to note here is that API security practice implementation involves multiple teams and systems. API security encompasses network security principles such as throttling, rate limiting, as well as fundamental data security concepts like identity-based security and analytics. Additionally, the OWASP Foundation, renowned for its commitment for improving application security and for its Top 10 Web Application Security Risks, have published API Security Top 10, which identifies top API security risks and vulnerabilities.[v] Prioritizing the mitigation of these risks and vulnerabilities should be a central approach.
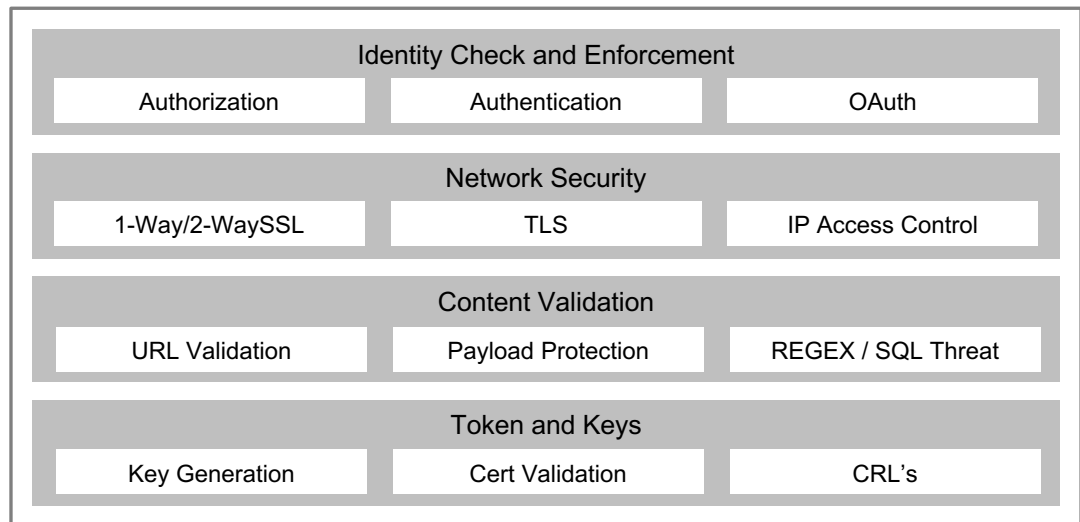
Identity Check and Enforcement		
Authorization	Authentication	OAuth

Network Security		
1-Way/2-WaySSL	TLS	IP Access Control

Content Validation		
URL Validation	Payload Protection	REGEX / SQL Threat

Token and Keys		
Key Generation	Cert Validation	CRL's

Figure 2: Sample API Security Pattern

API Governance

The API governance focusses on defining and applying practices, standards and system agreements for APIs and provides guardrails to ensure alignment between all the stakeholders in large-scale enterprises. The governance structure involves stakeholders from various teams, all working collaboratively to achieve business and IT objectives.
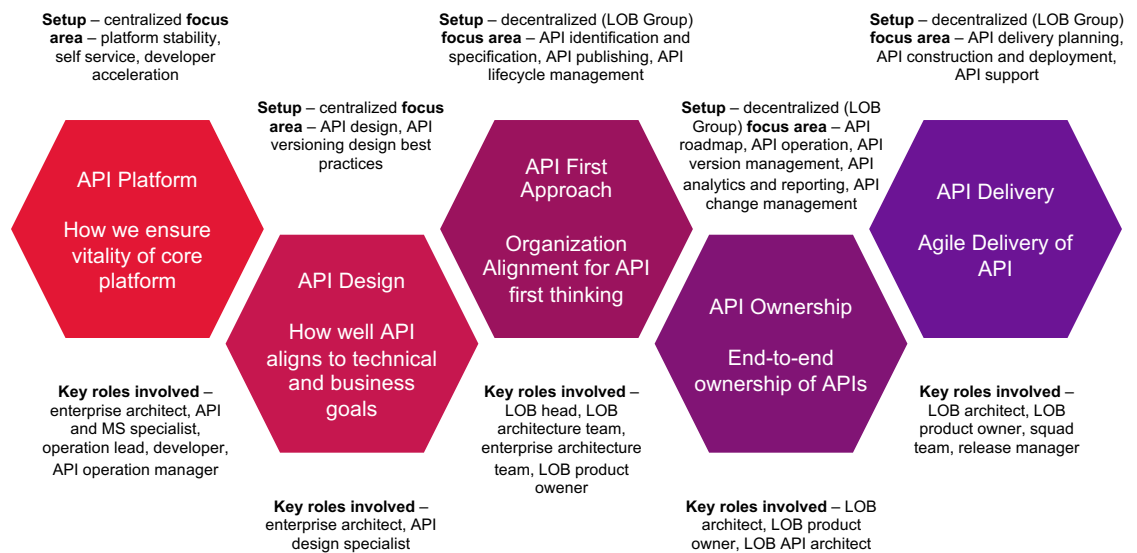
Setup – centralized **focus area** – platform stability, self service, developer acceleration

Setup – centralized **focus area** – API design, API versioning design best practices

Setup – decentralized (LOB Group) **focus area** – API identification and specification, API publishing, API lifecycle management

Setup – decentralized (LOB Group) **focus area** – API roadmap, API operation, API version management, API analytics and reporting, API change management

Setup – decentralized (LOB Group) **focus area** – API delivery planning, API construction and deployment, API support

API Platform

How we ensure vitality of core platform

API Design

How well API aligns to technical and business goals

API First Approach

Organization Alignment for API first thinking

API Ownership

End-to-end ownership of APIs

API Delivery

Agile Delivery of API

Key roles involved – enterprise architect, API and MS specialist, operation lead, developer, API operation manager

Key roles involved – enterprise architect, API design specialist

Key roles involved – LOB head, LOB architecture team, enterprise architecture team, LOB product owener

Key roles involved – LOB architect, LOB product owner, LOB API architect

Key roles involved – LOB architect, LOB product owner, squad team, release manager

Figure 3: Sample API Governance Model with Roles and focus Areas

API Monetization Commercial Models

API monetization models refer to strategies for generating revenue by offering access to a bank's or financial institution's APIs. By opening their APIs, banks can create revenue streams and foster innovation within the financial technology ecosystem.

Within the realm of API monetization, various models exist, encompassing approaches such free, fee based, revenue sharing, and indirect models. Explanations of each model and its associated subtypes are presented in Figure 4.
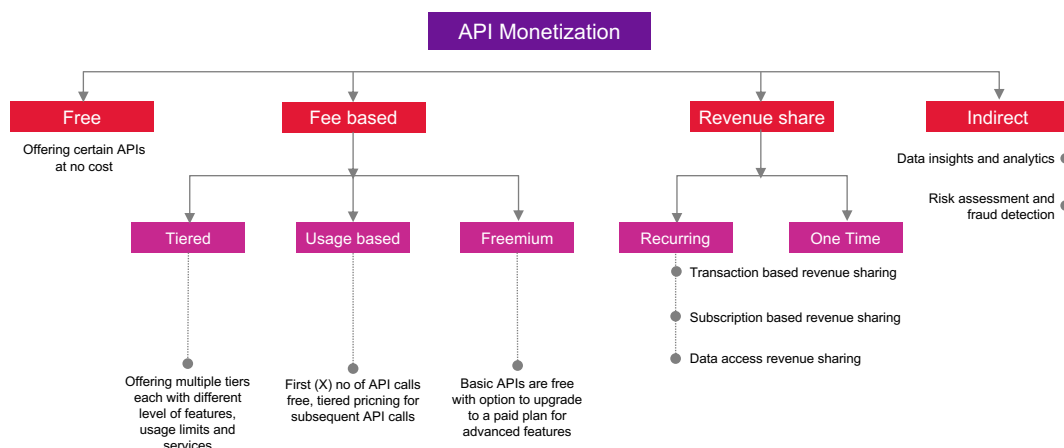
Figure 4: API Monetization Commercial Models

Model Type	Description
Free	The "free" API monetization model offering certain APIs at no cost
Fee Based	
Usage Based	Subscriber pays for what has been used. There are no minimums, no tiers
Tiered	Offering different pricing tiers or levels of access to an API, each with its own set of features, usage limits, and associated costs
Freemium	Basic access to APIs is offered for free, while advanced features or higher usage limits come at a cost
Revenue Share	
One Time	Service provider charges a one-time fee to a third party for access to their APIs or financial data.
Recurring	Service provider charges a regular, ongoing fee to a third party based on a percentage of the revenue
Indirect	
Data Insights & Analytics	APIs that provide access to financial data can indirectly generate revenue by selling insights and analytics derived from the data
Risk Assessment & Fraud Detection	Provide APIs that help businesses assess credit risk and detect fraudulent activities

Use Cases:

1. Availability for financing at car dealer during car purchase and instant disbursal of loan

| User Buys a car and looks for Financing Option | Car Dealer shares the cost & loan request with the API's integrated in Dealers system | The user selects the most appropiate loan offer | Dealer books the loan using Bank API's | Bank performs KYC and disburses the loan |

API Used: : Loan Request API, KYC, Payment Initiation

2. Fintech to process customer payments

| Fintech calls Banks API with the Wire Payment transaction | Banks validates the company | Banks processes the transaction and the money is debited into the clients account | The fintech is informed of the payment confirmation |

API Used: Wire Payment API, Client Validation, Payment Status

3. B2B companies for processing supplier payments

| B2B client requests supplier payment | Bank initiates the payment to suppier | Bank post the debit in B2B account | the B2B company is informed of the payment completion |

API Used: Wire Payment API, Client Validation, Payment Status

4. Initiation of cross border payment

| Clients make FX transaction using bank interface | Bank calls FX API to provide current rate | User Confirms the transaction | Bank initiates the transaction in foreign currenty |

API Used: FX Rates, Cross Border Payment API

5. Integrated hospital management system with financing for healthcare

| Critical Illness patients approaches hospital | Healthcare Co calaucaltes cost and share consumer | On Consumer Consent data is shared with Bank's API | Bank process and approved loan request | Healthcare system is updated for payment sna begins treatment |
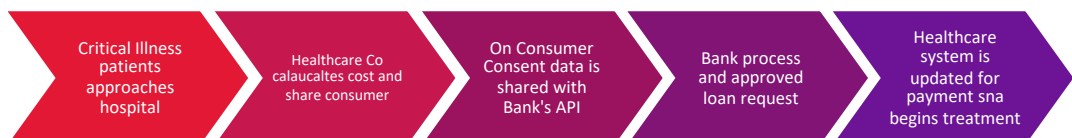
API Used: Loan Request API, Payment Initiation API

Tech Mahindra:'s Offerings

Tech Mahindra's API framework for financial services offers a comprehensive suite of components including business and domain expertise, technology integration, seamless implementation services, robust monitoring capabilities and a dynamic API marketplace. With wealth of experience in working in financial services, Tech Mahindra offers tailored solutions setting a high standard in API driven innovation in the industry.
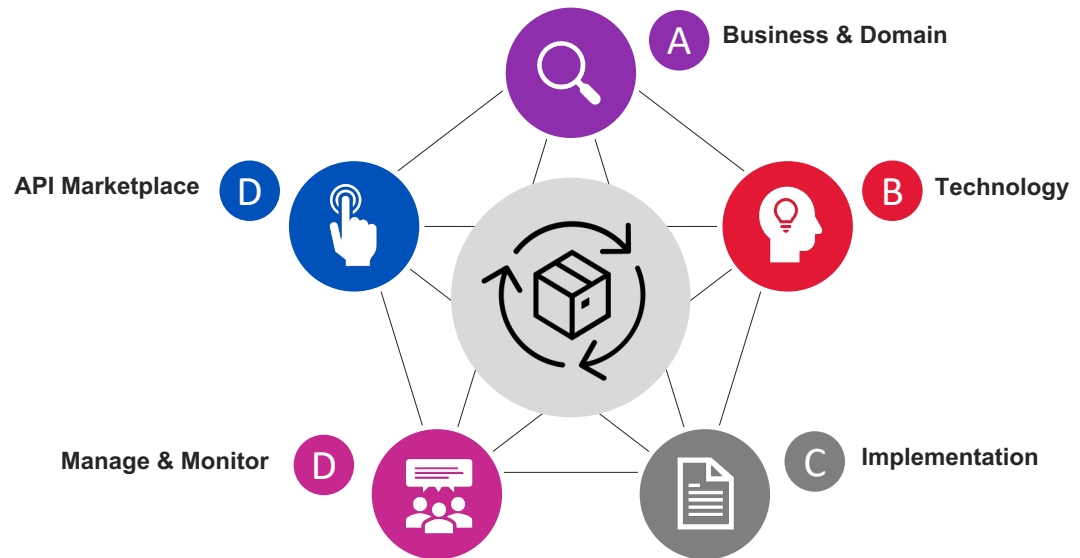

Figure 5: Tech Mahindra offerings

Business & Domain	• Formulation of the API business strategy • Identification of API banking use cases that align to the business strategy • 150 + use cases as a catalogue with detailed workflow with input and output parameters, across 6 verticals like manufacturing, retail, insurance, travel, logistics, and healthcare
Technology	• Technology experts evaluate and find the best technology for building, deploying and monetizing APIs • API architecture, API security assessment, API management, product selection, API design strategy • Predeveloped APIs and swagger documentation in open standards, utilities and frameworks for authentication, converter tool, and so on
Implementation	• Advisory services to prioritize implementation and rollout of APIs • API design and development, API implementation • API testing services – automated test framework implementation
Manage & Monitor	• Technology services to establish the framework to monitor and manage APIs • Customer services resources to address customer grievances and requests
API Marketplace	• API dev portal catalogue and user guide templates and digital marketing/promotional approaches • Consulting services for promoting the APIs • Developer portal to encourage API backed innovations • Digital marketing services to market the APIs
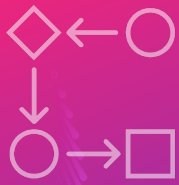
The Road Ahead

In the ever-dynamic realm of banking and financial services, the imperative to craft adaptable experiences tailored to evolving end-user preferences and motivations has never been more critical. Fortunately, the API ecosystem opens the gateway to an infinite array of possibilities.

In the API market, productized APIs enable straightforward, adaptable, safe, and developer-independent experiences. Organizations can position themselves to remain successful, agile, and flexible as well as to extend capabilities quickly to suit changing business needs and provide the real-time data today's consumers want by providing effective API product management, governance, and digital security.

Effective API product management, robust governance, and digital security constitute the pillars upon which this successful positioning is built. As we conclude, it is evident that embracing API monetization in banking and financial services is not merely an option but a strategic imperative for those seeking to excel in an ever-evolving financial landscape.

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Saurabh is a part of Digital Transformation Office for BFSI at tech Mahindra. He has around 20 years of experience in the IT industry and has executed large scale API transformation projects for global banking clients. He has deep understanding of API landscape and technology trends.

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Gaurav Garg is a banking consultant with Tech Mahindra. Gaurav carries with him 14 years of rich experience in the banking domain. In this role, he is engaged in designing innovative solutions in the digital banking space leveraging internal capabilities as well as partnerships with fintechs. Gaurav has extensive experience in consulting, business analysis and product development with deep understanding of technology as well as the domain landscape.

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Gopal Parasnis heads digital transformation for the BFSI vertical at Tech Mahindra. Gopal has around 25 years of experience in the IT industry and has been part of several large-scale digital transformation initiatives across the banking and financial services clients. He has led and advised on several mainframe modernization journeys. He has a deep understanding of the latest industry and technology trends in the space.

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