DAC
DIGITAL APICRAFT

The absolute guide to

The Future of API Marketplace

Creating a Connected API Ecosystem

Table of Content

SEGMENT 1 - INTRODUCTION

SEGMENT 2 - INDUSTRY TRENDS

SEGMENT 3 - FUTURE OF API MARKETPLACE

SEGMENT 4 - CONCLUSION

INTRODUCTION

01 SEGMENT

Introduction & Agenda

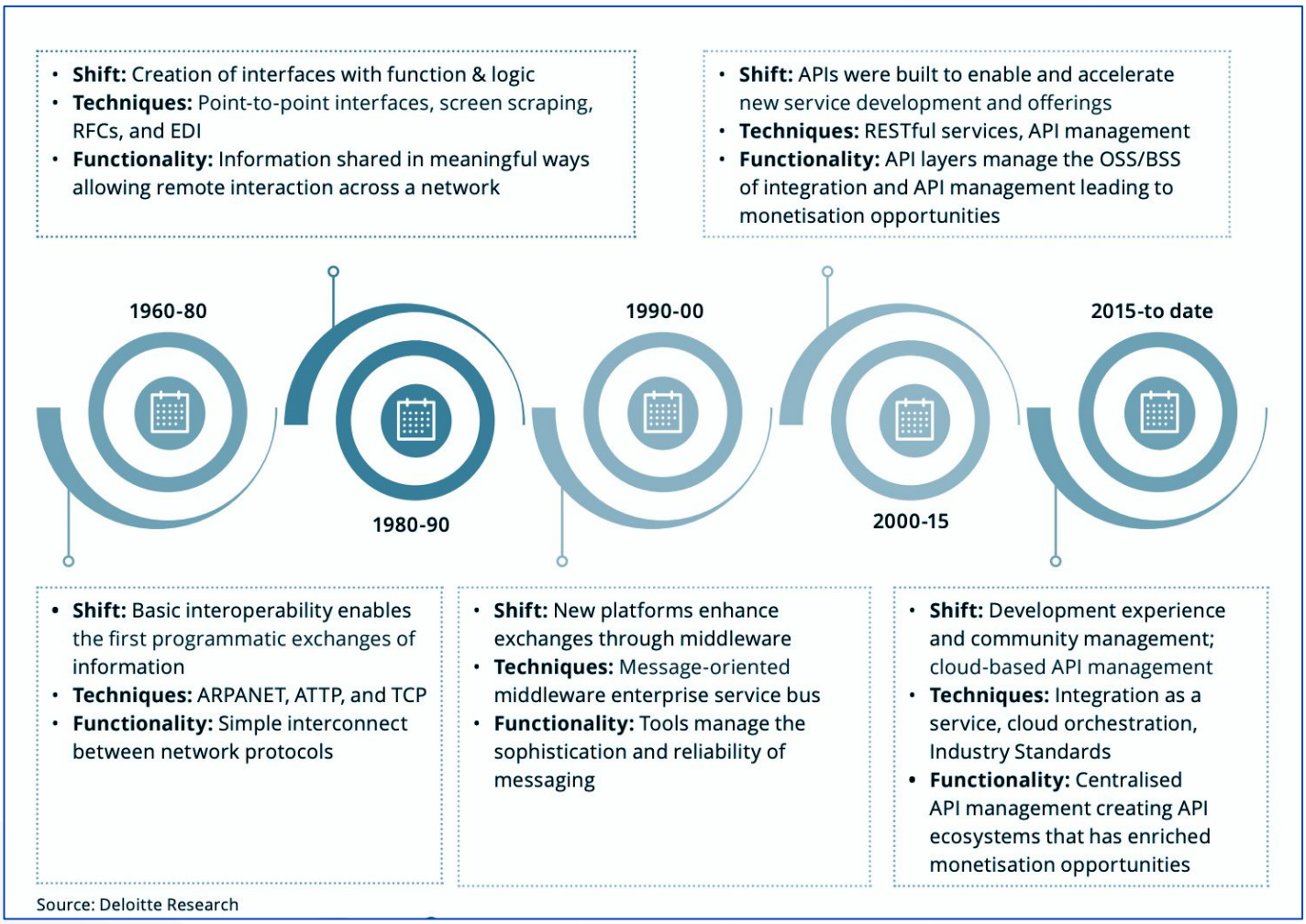
On Jul 27, 2022, Our CEO **Mr. Bharath Kumar** hosted a Fireside chat session at Apidays New York along with Mr. Jitin Bhandari, CTO of Cloud and Network services at Nokia, and Mr. Niranjan Ramaswamy VP, of Embedded Fintech. This session discussed the Future of the API Marketplace, creating a connected API Ecosystem.

This ebook provides critical insights into technological trends impacting Enterprise API strategy. Take a deep dive to learn more about the following stages of API Innovation, the future of the API Marketplace, API monetization, the Connected API Ecosystem, the Strategic Developer Portal, Next-gen Developer Experience, and much more.

API Landscape shift

Past, Present and Future

If you look at API Landscape, the term ' *Application Programming Interface*' was first recorded in a paper called "*Data structures and techniques for remote computer graphics* presented at an AFIPS conference in 1968. However, the idea behind APIs existed even before the term itself. They have grown significantly in the past ten years, as depicted below.



We have witnessed enterprises building their homegrown gateways with the challenge of needing to understand the need for API Gateways. Today, every enterprise uses API platforms, and they have realized that APIs are an effective way to enable digital transformation. Therefore, it's no more a challenge, they understand that this is an essential layer, and it reflects in their API Strategy.

Staying ahead of the pack and sustaining an edge to dominate the competitive market call for adopting new technologies in the business. You must consider the development of a highly interconnected API ecosystem, above and beyond digital transformation. As a result, the industry unfolds various innovative and growth-driven opportunities. A well-developed API-based integration has become the need of the hour to automate business tasks and seamless data exchange between several applications. In simple terms, the role of the API is to borrow the data and functionalities from one application and enable another to benefit from it.

Trends governing API ecosystem

"Building an enterprise-wide, centralized service catalog and expanding it beyond the APIs has become a critical strategy for enterprises." Enterprises now are creating 1000s of APIs, and their API ecosystems need to evolve to manage the complexities of usage and consumption, collaboration, management, documentation, and publishing of 1000s of APIs, and management of 1000s of users and developers.

Hence, adopting an API-first approach is the primary trend governing the API ecosystem.

COVID-19 has resulted in pushing enterprises towards digital transformation and online business through APIs. Here are the top 7 reasons why organizations are investing in API Management Software

- **Shoot Productivity Using Pre-Structured API:** Developing applications from the ground up to create new products is time-consuming and expensive. It's not worthwhile when you get the pre-structured automated API-based integration solution in the market, allowing you to enhance productivity. This way, you can integrate the APIs into your application in no time.

- **Economical & User-Friendly:** Did you know that the development and deployment of an application may cost approximately $270,000 as per the research report? But using the ready-made automated APIs enables developers to capture all the functionalities in their application instead of developing them from scratch. So, one of the most significant advantages of using APIs in the business is cost-saving.`

3 **Streamline Connectivity:** The primary role of APIs is to provide seamless connectivity among the systems, platforms, and applications. Internal APIs enhance communication within the business resulting in improved collaboration. As a result, the quality of deliverables tends to polish up, and you end up experiencing business growth at unprecedented rates.

4 **Development Of Supercharge Innovation & Creativity:** Innovation and creativity are two vital elements that open doors to success in the business. Fortunately, APIs make your business a powerhouse of innovation and creativity. Did you know that 56% of CEOs said digital improvements have led to revenue growth? So, this statement asks the companies to wake up as soon as possible and supercharge themselves with the APIs. Hence adapting the API-based integration and API Marketplace has become indispensable to meet the ever-changing customers' demands.

5 **Tailored Customer Experience Like Never Before:** Meeting the customer's expectations is every company's first and foremost goal. There is no point in standing out in the business when you do not stand out on your client's demand. So, what are the trending requirements from the customer's perspective? They want personalized consultation and top-notch experiences, which is possible by leveraging the API's technologies. It assists your developer's team in creating customers' specific products and detect their weaknesses, helping you touch their hearts with corrections.

6 **Scalable Business With Effective Marketing:** APIs enable you to scale your business with effective marketing tactics. API Marketplace is the best platform to market your APIs efficiently in front of your customers (developers). This way, tapping into a more extensive customer base globally becomes an easy task that would otherwise be impossible owing to a lack of resources and awareness.

7 **Enhance Profitability With API Monetization:** API monetization is the most effective way to generate revenues and scale the business worldwide. A business can expose the functionalities of products or services through APIs, enabling them to get some charge from the users if they subscribe to their plan. This way, you end up with a massive transformation in the business. Let's convert your digital assets into revenue-generating resources with the monetization facilities offered on the API Marketplace.

API strategy

Enterprises of all sizes are increasing their API efforts as it brings abundant technological advancements, but many organizations are experiencing plenty of challenges while integration is the major concern of security breaches, managing APIs complexities, and the time & cost associated with it. Irrespective of the challenges faced, in a recent survey conducted by Gartner, it was found that 70% of organizations are using API management and mediation to build their digital platforms.

Many IT leaders overlook the business potential of APIs as digital products. So the API strategy should be to cater to all the developer platforms and not just have a platform that just solves API runtime. For this, you need to build a lot of elements including API marketplace, bring a developer an experience by providing a smart & transactional sandbox and also giving them the scalability for proper monetization, while building a seamless experience. Eventually, the natural progression for enterprises is to build App studios or App marketplace experiences. This is the future where enterprises are moving towards building new sets of experiences for third parties and these third parties are coming faster to enterprises & asking for data and a lot of enterprises are now working offline to onboard them. Therefore, the need for an API marketplace is much more, they need a more complex monetization commercialization engine that can go into the marketplace which can enable them to seamlessly grow the third-party ecosystem.

INDUSTRY TRENDS

02 SEGMENT

Banking

Industry Landscape

The COVID-19 outbreak has brought digital transformations to the global banking and finance industry. The banking industry has grown remarkably to deliver great experiences and better services to customers. The emergence of APIs in the banking sector has brought revolutionary changes over the last ten years. APIs facilitate the exchange of all the information between the applications and enables them to have better interaction. In the wake of high demand, enabled the banking sector to leverage convenient collaboration and networking.

The communication between the software becomes effective and seamless. As a result, clients get updated with all information timely. In addition, banks support customers digitally 24X7 regardless of their timings and place.

There are various reasons for banking and financial APIs proliferation in the banking and finance industries. APIs have developed greater innovation enabling suppliers and consumers to communicate in new ways. Financial companies can outbid their competitors only if they integrate APIs technologies. Otherwise, their survival in the market will be a significant problem. Nowadays, people don't want to visit the physical branches. Subsequently, hundreds of branches have closed because most clients have transformed themselves into digital banking.

Future Ahead

- Focus on API adoption to reduce IT complexity & enable agility to onboard more developers & partners.

  - Comply with regulatory requirements.
  - Drive Innovation with cross-industry collaboration leveraging their APIs.
  - Strong focus on Developer Experience (DX) resulting in:

    - API adoption, reusability for internal employees
    - Security & compliance integration with CI/CD
    - Expanding the partner ecosystem
    - Productivity & cost savings

  - Unified developer portal to cater to both internal & external stakeholders.

Benefits of the API integration in the Banking industry:

Better Client Experience: A client expects accurate account information on time from the bank, which is the key to building a long-lasting relationship with the client. Timely access to the correct account data enables customers to fulfill their financial tasks quickly. So, API integration in the banking industry has made it possible to help the bank to satisfy their customers at a noteworthy standard.

Seamless Collection of the Payments: Most business owners are often worried about payment collections. So, to facilitate the payment collection method, it's better to adhere to the correct API banking integration. As a result, you end up receiving smooth payments from customers. Moreover, there are multiple opportunities for diversifying the payment methods.

No Financial Threats: Businesses have been experiencing prodigious financial threats daily, which need to be overcome at any cost. Eliminating financial threats is indispensable if you want your business to stay ahead of the curve. So, how do companies win over this situation? Installing banking APIs is the best option to alleviate security threats and deliver an exceptional banking experience.

Ensure High-Level security: API banking lets you enjoy high-level security over your customer's private information. However, users can manage the entire data in their ways: they can restrict the data they don't want to share with third parties. Subsequently, there is no possibility of the data leaking. Doesn't it sound great?

Multiple Opportunities to Enhance The Offerings: The right API banking innovation enables businesses to strengthen their products and services more than their competitors. Subsequently, client engagement tends to improve.

Access to Real-Time Transactions: Are you spending a considerable amount of time reconciling transactions in your business? If yes, you should emphasize accessing the real-time transactions possible with the API banking integration.

Open Banking Movement

Open banking is a financial services term within financial technology. It refers to- The use of open APIs that enable third-party developers to build applications and services around the financial institution. The exchange of customer information through banking APIs is known as the term API banking, and there has been a tremendous rise in demand in the market.

New regulations & compliances

In 2016, the Competition and Markets Authority (CMA) in the UK raised the demand for data access from several banks for third-party applications. These banks decided to share access to their customer's information with them at that time. This decision was a small step toward the open banking API ecosystem. After a few years, there was another advent known as PSD2.

However, this PSD2 invention has helped significantly in the precise development of the open banking API. In addition, RBI (Reserve Bank of India) also introduced UPI (Unified Payments Interface) payments which eventually played a vital role in the increased demand for banking APIs in India. Forbes declared 2017 as "The year of the API economy!" Consequently, this brought ample new opportunities. Since then, the demand for API providers has kept rising.

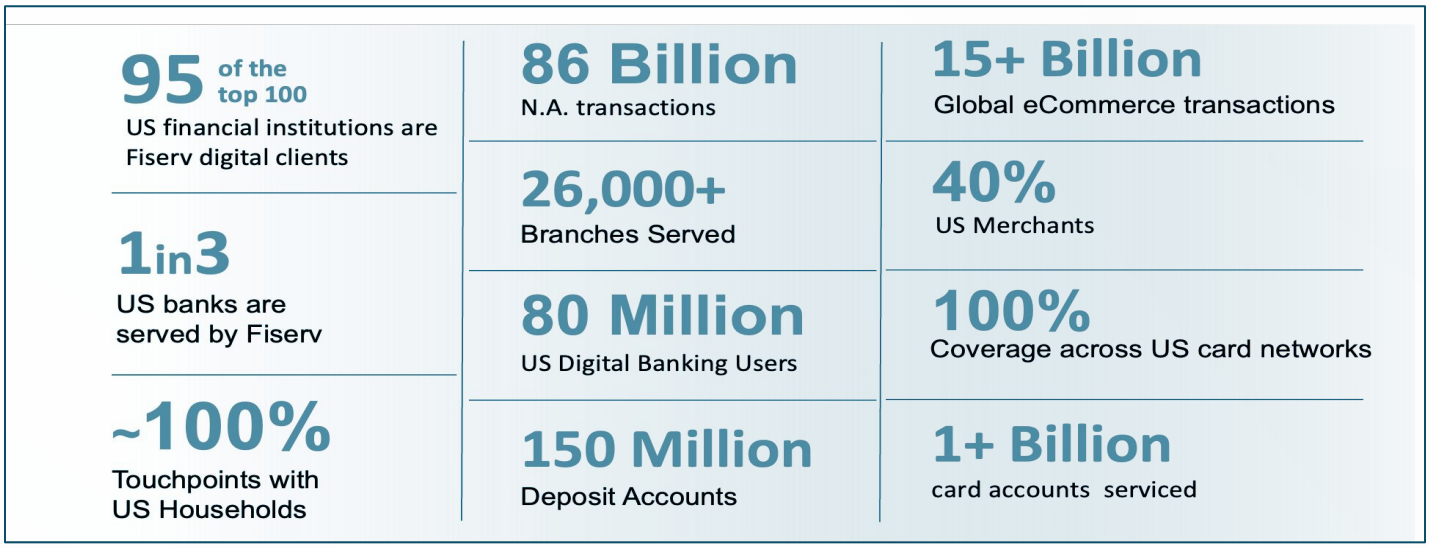
The EU GDPR has set significant standards for data transmission & protection across the globe. Although GDPR and PSD2 went live in 2018, it is clear that both policies share similar objectives in terms of data security and portability.
Many countries, including Canada, Singapore, Japan, South Korea, and India, do not have formal Open Banking regulations, but the policymakers are introducing measures to promote data-sharing frameworks in banking.
The US has also opted for a market-led approach without any material government initiatives to support the development of Open Banking products and services.

Australia	The Australian government took inspiration from open banking in Europe, but went a step further. The government introduced CDR in 2017, which gives consumers (both individuals and businesses) greater access to and control over their data. Open banking in Australia will be more along the lines of what we might term "open finance:" savings accounts, investment accounts, pension accounts and the like are all in the scope of the regulations.
Europe	Europe has by now rolled out open banking across the continent, 87% of countries offer open banking in some form or other.
Hong Kong	Hong Kong is also working in a market-driven approach to open banking, it has not mandated banks to provide APIs and they do not play a central role in certifying data recipients
U.S.A.	Banks in the US are quite forward-thinking. Here open banking is now being actively considered by the Consumer Financial Protection Bureau (CFPB), mandating banks to open up access to their data

Countries	Initiatives
Singapore	Singapore is taking a more market-driven approach to open banking than the UK. Here access to APIs remains subject to bilateral agreements between the banks and those seeking access, such as fintech.
Canada	Open Banking in Canada begins soon, with a new report calling for an initial phase starting in January 2023. Currently, a crucial time is running for Canadian banks to advance their changing agendas and refocus on powers to win in the market.
India	The Indian Open Banking ecosystem continues to thrive with active support from the government as well as the market. With the launch of Account Aggregators, API readiness of banks & NBFCs, entry of multiple neobanks, and intense funding, India has become a role model for Open Banking Deployments globally.
Mexico	Open banking in Mexico will force ITFs (financial technology institutions) or fintech to share their data via APIs. In this way, banks will also be able to use their data which implies a two-way flow. Mexico is the only country in the world that establishes this exchange of information between fintech and banks.
U.K.	Open banking surpasses five million UK customers, four years after being mandated by the competition regulator. It took 10 months to grow the number of users from one million to two million in 2020, but it has taken just four months to grow from four million to more than five million.

Fiserv - Innovation and Differentiation

Fiserv is one of the largest fintech in the world, and some may say that they're one of the original fintech as they have a vast array of banking and payment capabilities to serve banks, credit unions, merchants brands, governments, and also other fintech; here are some stats showing why Fiserv is uniquely positioned to drive innovation and differentiation.



With 150 million people having their accounts in Fiserv products, they have access to a lot of financial data and so what that does is give us access to data to help and protect that data with a regulated industry but to create very personalized touchpoints and experiences. As one of the largest Fintechs, it helps in influencing Open Banking started in the UK and the essence of open banking is a movement where you don't need to go to a bank to do your banking, the bank needs to come to you and you should be able to access your bank from wherever you want.

Developer experience ecosystem - Fiserv's vision of creating third party ecosystem

Mr. Niranjan Ramaswamy, VP & GM - of Embedded Fintech, tells us about Fiserv's vision to create a third-party ecosystem; "Fiserv has hundreds of products and consequently thousands of APIs, and I think we've made a lot of technology companies happy as we have every ESB (Enterprise Service Bus) and every gateway that exists, so it causes some disruption and chaos within our company but at the end of the day when you look at the developer experience it has to drive faster time to market. It has to be clean and crisp. The example I give my technology team is many moons ago when I wanted to buy a car I would go to a car dealership and sit there for six hours and fill out 50 pages of paper and then take care of financing and maybe walk out of there with a car but today, I can do it in 10 minutes in the caravan and the car shows up at my house".

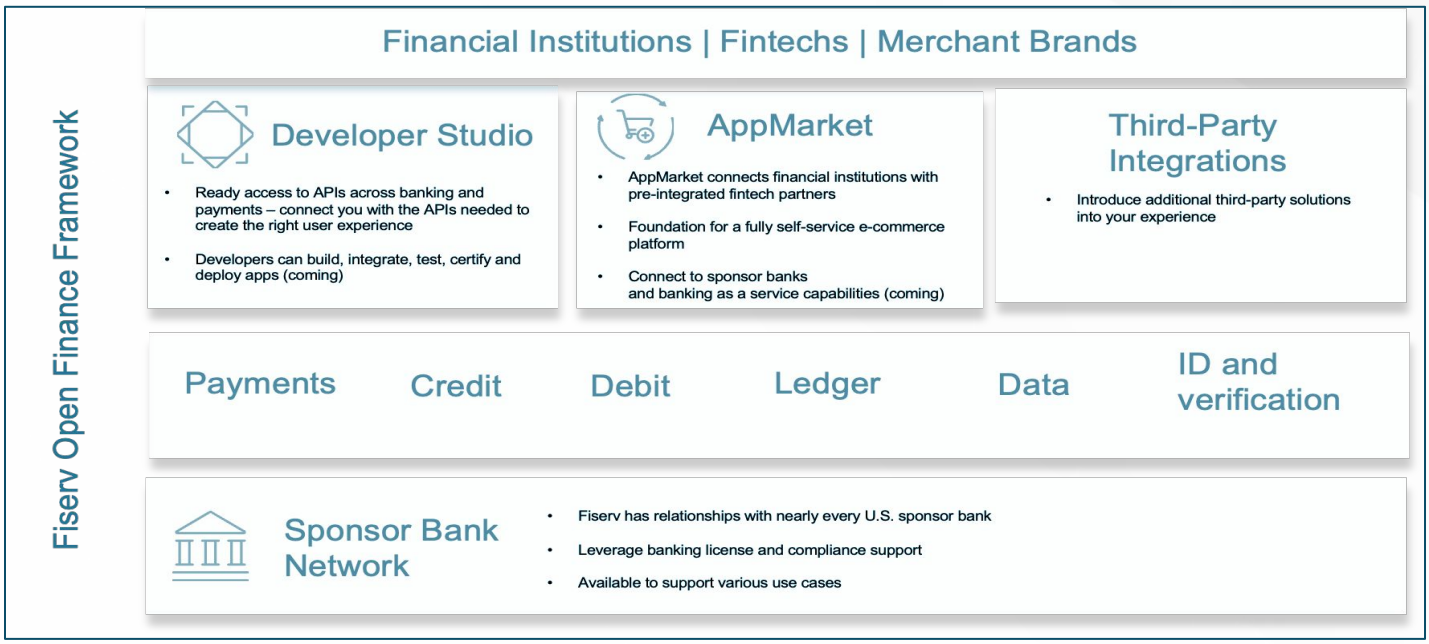
It is very important to have the developer experience seamless.

01 You have to make it as easy for a developer to see and understand and experience an API as easy as it is to order a pizza. If you make it any more difficult then they're not going to be able to do what they came there to do.

02 You have to lower the barrier of entry, you can't make it too expensive for a developer to come to your developer.com and figure out what to do because they're trying to build software and not make it resistive for them to start working with you.

03 We want to recruit talent so we want to show them what we have and when you open it up, there are so many intelligent people out there that will think about things that we haven't thought about, and maybe they want to come and work for us.

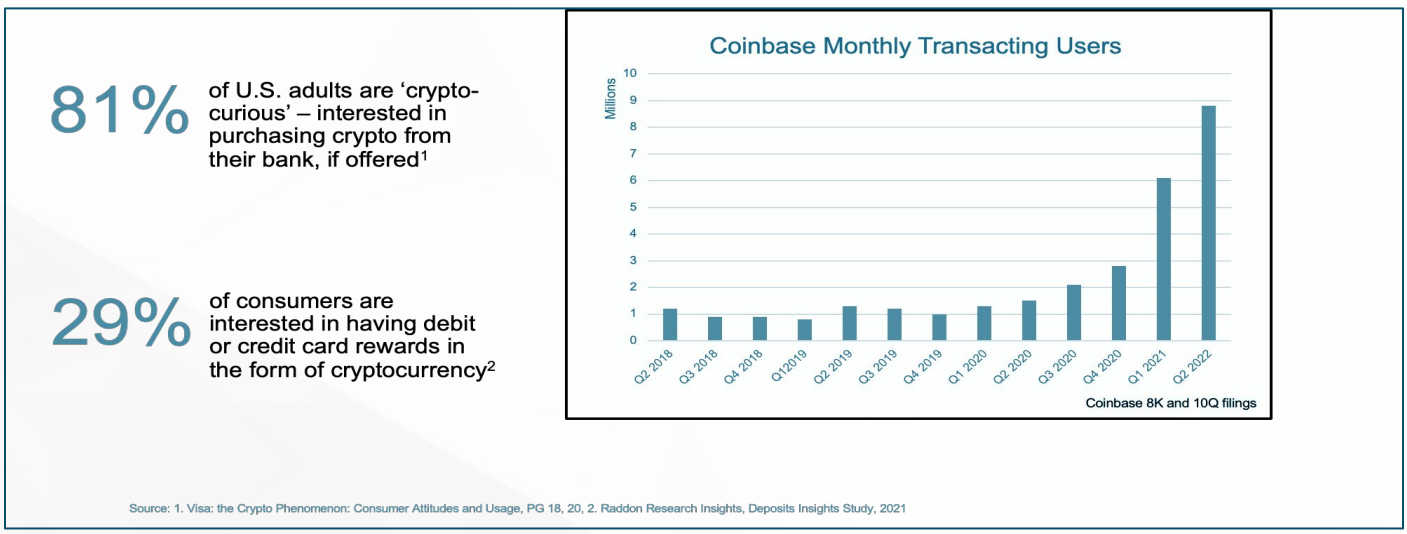
Fiserv depicts the open banking framework it follows in the graph below:



Cryptocurrency - How is it impacting Fintechs, Opportunities and threats

The total market value of all the crypto assets surpassed $2 trillion as of September 2021—a 10-fold increase since early 2020. An entire ecosystem is also flourishing, replete with exchanges, wallets, miners, and stablecoin issuers.

When you look at cryptocurrency, it's a different digital asset right now it's everywhere but if you just step back and understand what's trying to go on there these are some statistics over here,



At least in this country, 81% of US adults are crypto aware and of that 81% about 65 percent of crypto curious, so some of us have gone and bought a bitcoin or Ethereum, etc but what we found in the research is that 70% of people will go a little bit further if crypto was offered from their bank and they would think it's innovative.

The Window ahead

It is an opportunity for banks to think about how we will get there, and a lot of that is going to be enabled through integration, collaboration, and co-innovation through APIs and messaging backbones because it's going to be fast at the same time it being real-time so it happens instantaneously. Crypto is not just currency it can be used in other areas as well, Crypto assets offer a new world of opportunities: Quick and easy payments. Innovative financial services. Inclusive access to previously "unbanked" parts of the world. All are made possible by the crypto ecosystem.

The Gamble

But along with the opportunities come challenges and risks. The latest Global Financial Stability Report describes the risks posed by the crypto ecosystem and offers some policy options to help navigate this uncharted territory.
Many of these entities lack strong operational, governance, and risk practices. Crypto exchanges, for instance, have faced significant disruptions during periods of market turbulence. There are also several high-profile cases of hacking-related thefts of customer funds. So far, these incidents have not had a significant impact on financial stability. However, as crypto assets become more mainstream, their importance in terms of potential implications for the wider economy is set to increase.
Looking ahead, widespread and rapid adoption can pose significant challenges by reinforcing dollarization forces in the economy—or in this case crypto nation—where residents start using crypto assets instead of the local currency. Cryptoization can reduce the ability of central banks to effectively implement monetary policy. It could also create financial stability risks.

Threats to fiscal policy could also intensify, given the potential for crypto assets to facilitate tax evasion. And seigniorage (the profits accruing from the right to issue currency) may also decline. Increased demand for crypto assets could also facilitate capital outflows that impact the foreign exchange market.

Telecommunications

Industry Landscape

The COVID-19 pandemic has profoundly changed the traditional ways of working and has accelerated innovation and the adoption of new communications business models. Even before the pandemic, telcos had already been dealing with new market disruptions and a new kind of consumer.

Big data, IoT, and artificial intelligence have been here for a while. The real distinction will start when Telcos will start pumping more real-time information at a higher velocity. Telcos also have started to see new competitors and competition in the form of SaaS providers and CPaaS services, such as OTT providers and technology providers such as network as a code that affect the value chain. While much of the world is still developing 3G infrastructure, 4G traffic is growing at a higher rate. In fact, in 2015, 4G data traffic surpassed 3G traffic—by 47 to 34 percent. And 5G infrastructure is on the way because tomorrow's telco can't get by without it.

Present & the Future

New technologies continue to disrupt the communications industry by offering improved customer experiences in this hyper-connected world. Be it network slicing, low latency mobile networks or gigabit connectivity; 5G promises countless opportunities for telecom companies enabling seamless cross-industry collaboration & accelerating the digital transformation journey

APIs changing the Telco Landscape

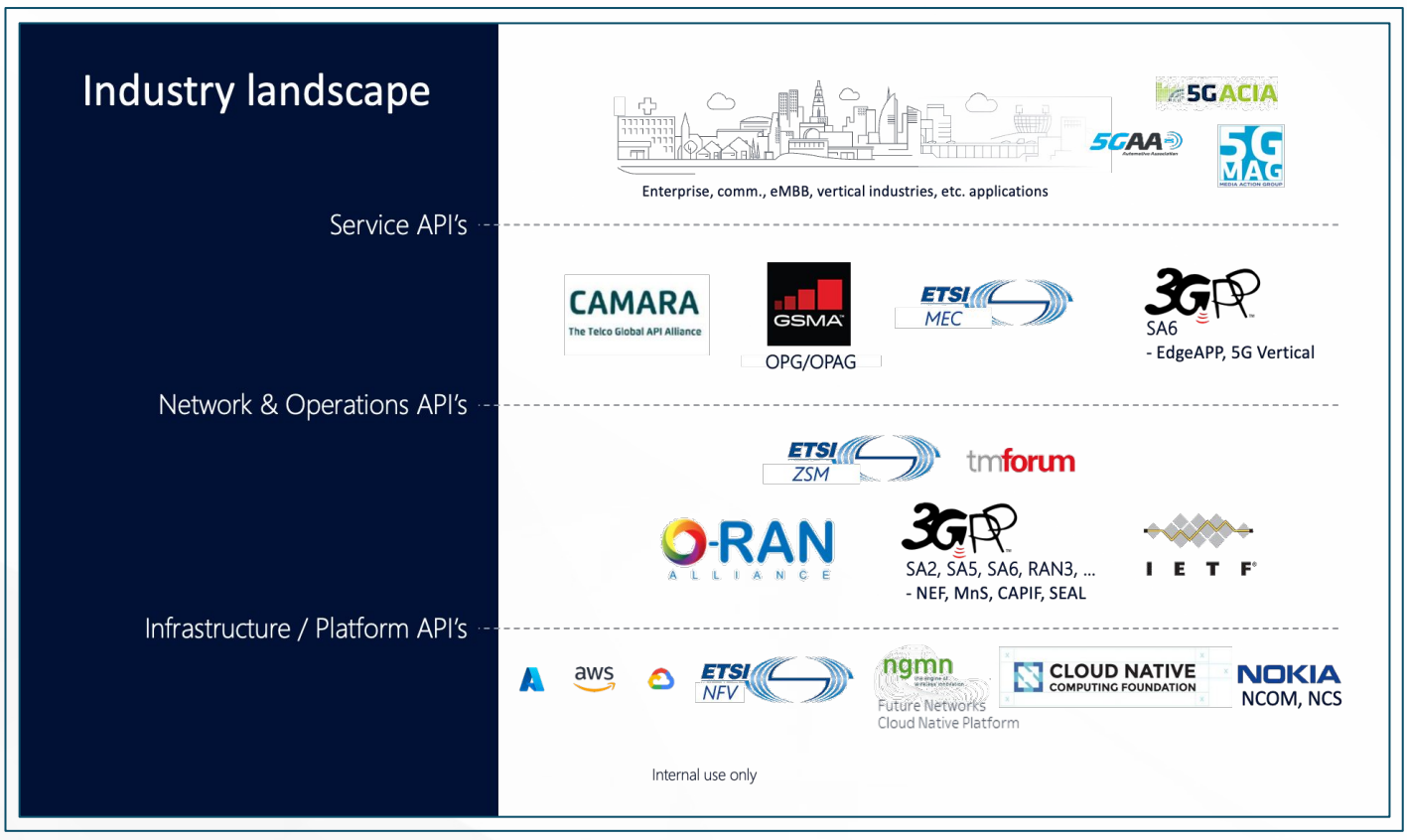
From pure network play to network-as-a-service, 5G is going to create a vast difference in the industry landscape as the ecosystem players are growing really fast with AR/VR applications.

A lot of CTOs, CIOs, both the service provider sides whether big or small have this question as what's going to be different this time around for Telcos, it's going to be enormously different as for the first time we are rebuilding the networks in a cloud-native fashion, everything is going on public cloud, hybrid clouds and we're talking about private clouds adoptions or pieces of it and because of that of the cloud native nature of the aspects.

Telecommunication is a highly regulated industry just like banking or healthcare. What is good about communication is there are a lot of standards for them like 3GBP and TMF which are controlling the operations in the networks. If you flip these standards or standardization body, everyone is

talking about API First design first principles so that's something enormous if you look at the 3GBP specifications which is the latest one coming from 5G and 5G advanced they are started to document about how the network persona any APIs would be exposed out so that's a very encouraging sign from both networks and operations api standpoint the other piece of it you know communications industry as a whole has started a lot of initiatives, camara is a very interesting project where there is a Telco Open API alliances that's going on really well.

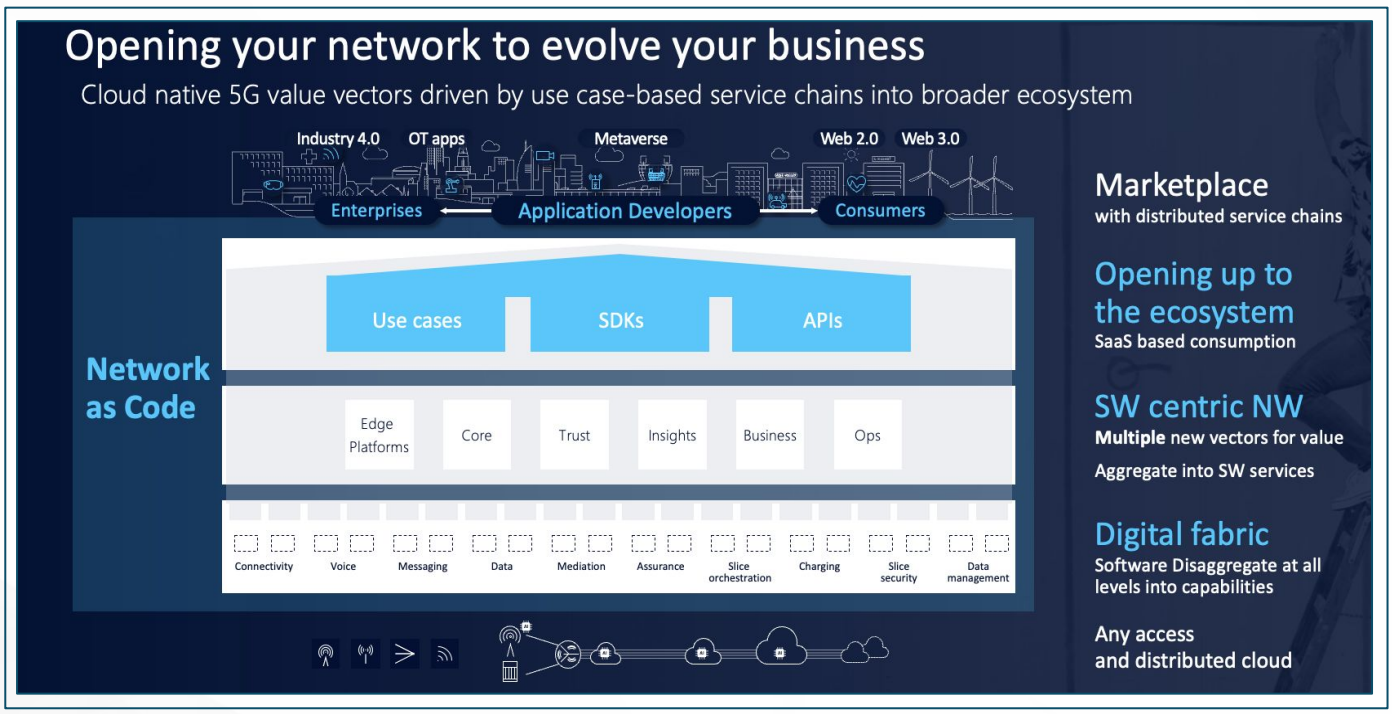
What is exciting to know is not just about telco but how the associated service API and operations APIs, it's the industry verticals that look at the 5G automation. Industry is now talking about how do you define the right set of APIs that one can use into a car and use the extreme bandwidth and low latency capabilities of 5G and make it relevant or upload a software when tesla needs it at 3am in the morning. If you look at this chart from bottom to top up from the cloud infrastructure to the application provider everybody is now thinking about programmable persona and APIs and this has never happened in this industry



5G, an important vector in leveraging API based Strategy

In the last 10 years, Twilio has changed the c-paas industry as a whole, if you see they've just done programmable three vectors voice, video and messaging and through those three vectors and because of the programmable persona a 35 billion dollar market of what we call a c-paas was born.

Similarly, doing active business heavily in growth 5G is of enormous value and you can look at it as building blocks from the radios to the data or the packet core pieces of it to the voice pieces of air to the operations analytics, every single building block of 5G is now cloud native and software centric in nature and the very fact that it's designed on Open API first and cloud native design principles. The below visual chart shows the state of the affairs of the networks is going on.

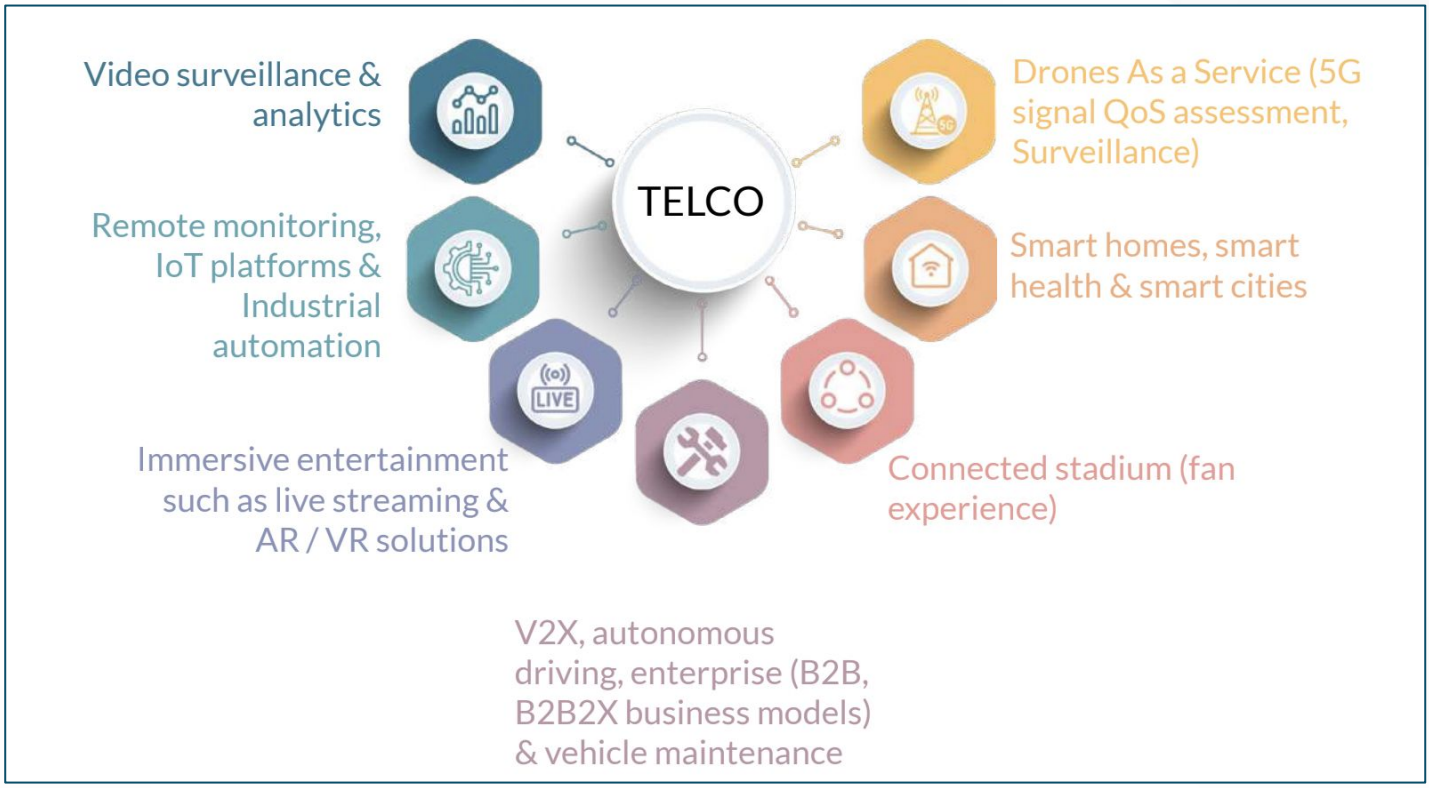


Even the radio stations out there are exposing proximity and location specific vectors that can give you a precise two millimeter to three millimeter precision on location and proximity and that's something very important and critical for industry floors, we are big into private wireless right now and we are turning on a lot of industry 4.0 transformation where conveyor belts, robotic arms, earth movers they're all using high speed data and they are specifically looking for a 3 millimeter, 5 millimeter precision as they're moving stuff from the conveyor belts.

Therefore, having that radio vector and getting that proximity and location specificity coming out in the programmable persona used by the PLC controller on that robotic arm is almost a necessity if you want to capitalize, not only on the power of the network but also want to monetize it. You may think of these all as 20+ vectors and if the 3 vectors between voice, video and messaging could create about a 35 billion dollar market, what could the 20 plus vectors on a network persona of a 5G could do.

Nokia has been thinking about how to expose the high-end analytics of the networks, how the networks that are being used consumed, where the data bandwidths are how they are being optimized what's the customer experiences how's the operations aspects of it and not only internally for the network operators but also taking it to the developers community to create new value and it's all based on APIs and programmable persona

Metaverse of web 3.0: 5G enhancing developer experience



5G is all about crossing that B2B bridge and to create a more monetizable network that gets to the point of creating a more programmable persona and to make the abstract ability of this network simple and effective enough to the developer ecosystem that latches to this meta versus of web 3.0 ecosystem or the industrial metaverse and the consumer metaverse, it's all about how you participate in the distributed service chain.

From the 5G standpoint that not only caters to the consumer side of it but also to the industrial metaverse and the IoT applications and the web 3.0 applications so the developers at large are going to be humongous. Movement from traditional networks to the future, there's a lot of programmability coming out.

The developer experience that you see is important because you're building a set of new set of services for developers. Developers are becoming your new customers and it opens the door to tons of network monetization options with 5G, powered by the Internet of Things (IoT) and augmented reality technology. Here are some use cases,

Nokia's view on Gartner statistics

A study conducted by Nokia with gartner behind the 5G ecosystem to look at where the money is actually being spent and as it came out, that 256 billion will be spent in the next three to five years and only 29% of it will be on connectivity, network & infrastructure. About 216 billion of that spent would be in digital applications.

The future is all going to be about distributed service chain, when you need it, how much you need it and if you be able to monetize on it and those dynamic distributed service chains are going to be really fast. Talking about consumer metaverse and industrial metaverses, you should be able to consume the network on demand and be able to pay away for it and then switch back to your normals.

Nokia did an anomaly detection test for Vodafone in Europe, by taking some drones that were programmable PLC drones and they fired up network APIs on on-demand bandwidth usage for agriculture farming and they were using anomaly detections either for their farms or for their windmills and they are able to call a single API to kick the network bandwidth from 20 mbps to 200 mbps to capture the anomaly and release back the bandwidth back to 20 mbps. During that time because the network is precious and the assets are precious you can call Fiserv's APIs and have banking and charging monetization into it. This is a live use case for a distributed chain.

Industry 4.0

The National Association of Software and Services Companies (NASSCOM) study titled. *'India Industry 4.0 Adoption: A Case to Mature Manufacturing Digitalization by 2025'* reflects that the investments in Industry 4.0 have grown by approximately 10X in the last decade and are expected to grow to $200+ bn by 2025.

Industry 4.0 investments by manufacturing companies, now at $102 Bn, comprise 20% of all manufacturing tech spend. This investment will be predominantly in digital technologies like IoT, AI/ML, IT-OT integration, robotics, and human-machine interfaces. These will account for almost 40% of all manufacturing technology spending. Successful Industry 4.0 implementations are an interconnected technology framework to enable customer-oriented production. Servitization, integrated customer and employee experience, and an urgent need for flexible operations and business agility are set to be the biggest drivers of Industry 4.0 in the next decade.

Sharing her thoughts, Debjani Ghosh, President, NASSCOM, said, "Industry 4.0 has reached a tipping point in Indian manufacturing, with a strong desire to boost investments in the next two years to create exceptional customer experiences and long-term business models. Moving forward, it will be fascinating to watch how ready the Indian manufacturing industry is to adopt and scale Industry 4.0, which is largely determined by the use cases selected, the capacity to scale Proofs of Concept, and the alignment of IT and OT capabilities."

With accelerated investment in foundational techs like Cloud and IoT, the Indian manufacturing sector has started pivoting to digitalization, cites the report, with $5.5 - $6.5 billion spent on Industry 4.0 in FY21.

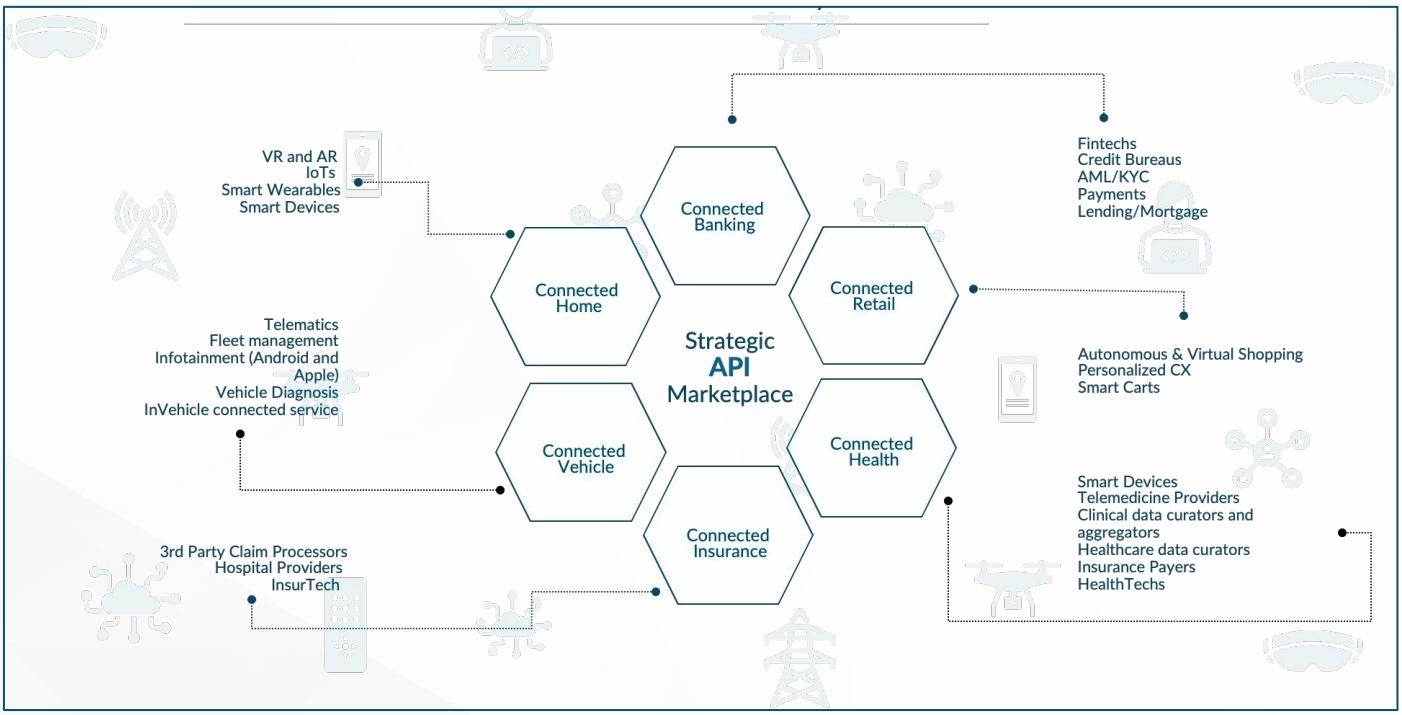
FUTURE OF APIMARKETPLACE

03 SEGMENT

The futuristic API connected ecosystem

Growing opportunities in the digital world push every enterprise to adapt an API-powered digital ecosystem that eventually raises revenue and offers growth opportunities. Now, all businesses are digital, including healthcare, financial industries, banking, telco and more; APIs allow them to collaborate and share potential capabilities while acting as a bridge. Apps that do not generally work together can be connected with combined capabilities and strengths. API management ecosystems work to unite consumers and API providers to present a seamless experience to customers.

Competition contributed to innovation in the past. But enterprises today have a different outlook, they understand that developing APIs one on top of the other to expand capabilities is not feasible in the physical economy. Your digital strategy is dependent upon the health of your API ecosystem, and how much value your API provides to developers belonging to your organization and also outside the organization. An API ecosystem strategy is one that welcomes collaboration over competition, innovation over silos



Cloud adoption

Worldwide end-user spending on public cloud services is forecast to grow 20.4% in 2022 to total $494.7 billion, up from $410.9 billion in 2021, according to the latest forecast from Gartner, Inc. In 2023, end-user spending is expected to reach nearly $600 billion.

“Cloud is the powerhouse that drives today’s digital organizations,” said Sid Nag, research vice president at Gartner. “CIOs are beyond the era of irrational exuberance of procuring cloud services and are being thoughtful in their choice of public cloud providers to drive specific, desired business and technology outcomes in their digital transformation journey.”

Infrastructure-as-a-service (IaaS) is forecast to experience the highest end-user spending growth in 2022 at 30.6%, followed by desktop-as-a-service (DaaS) at 26.6% and platform-as-a-service (PaaS) at 26.1%. The new reality of hybrid work

is prompting organizations to move away from powering their workforce with traditional client computing solutions, such as desktops and other physical in-office tools, and toward DaaS, which is driving spending to reach $2.6 billion in 2022. Demand for cloud-native capabilities by end-users accounts for PaaS growing to $109.6 billion in spending

Driven by maturation of core cloud services, the focus of differentiation is gradually shifting to capabilities that can disrupt digital businesses and operations in enterprises directly. IT leaders who view cloud as an enabler rather than an end state will be most successful in their digital transformational journeys. Similarly the enterprises combining cloud with other adjacent, emerging technologies like APIs first strategy will fare even better.

API landscapes are growing and every enterprise is creating many public and private APIs everyday and they want to make sure that they are keeping up with the growing demand of publishing and consuming APIs. With APIs and microservices growing both organically and also enterprises are going on Open API first and cloud native principles for building at speed and scale.

API Monetization

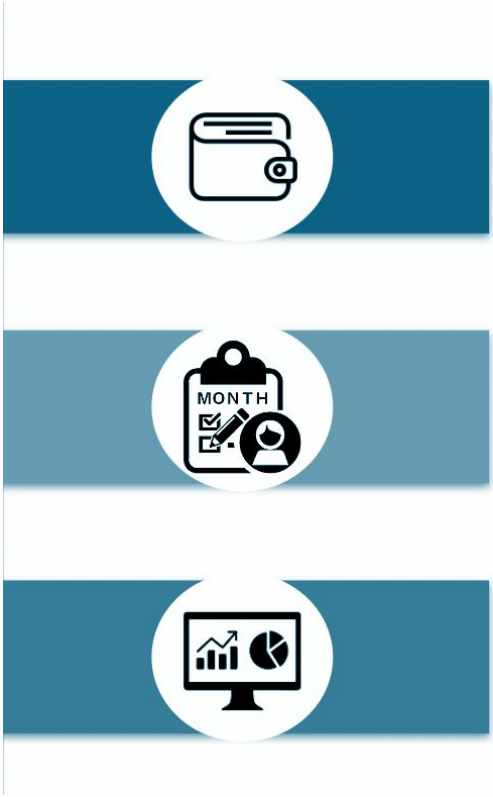
API monetization as the name suggests, it is the process by which enterprises create revenue from their application programming interfaces (APIs). API monetization is a way to unlock value from your APIs and increase their adoption. It enables enterprises to reach beyond current business models, scale API programs, and open new opportunities with customers, developers, and partner

Benefits of API Monetization

End Users	Your Developers/API Consumers	You
Access to more options for doing something,	Financial incentives to using your APIs,	Brand recognition and trust,
Exposure to technologies that would otherwise be unavailable.	Interface with a broad range of platforms and services,	Increased adoption of more APIs from your brand,
Broader access or choice of innovation, design, and user experience.	Build on your APIs for additional capabilities or innovations,	Increased use/sale of your hardware and/or software,
	High scalability, low friction, high availability depending on the use case.	Increased capabilities of your hardware and/or software,
		Partnerships with companies that complement your products or services.

Publishers can monetize their listed APIs and earn more significant revenues from them. You can develop different kinds of subscription plans like Netflix and Amazon Prime. It's one of the best and most effective strategies to jump directly into the new API economy, driving new business innovations and creativity. The API monetization is based on various models explained below

- **Pay-Per-Use:** This is the straightforward approach of charging the amount per the MB of data. It is mainly for the digital product vendors.



Developer pays for what has been used- no minimums, no tiers

Dashboard show the consumption statistics

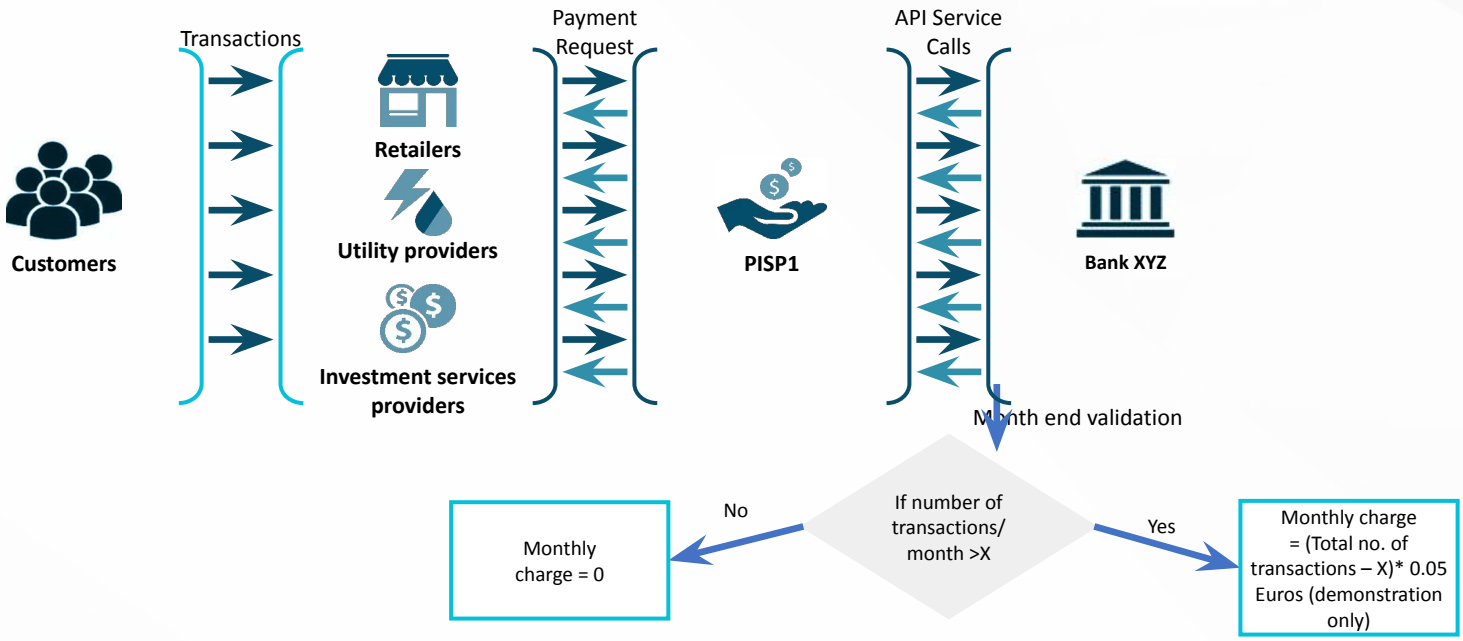
Billed monthly

- **Subscription:** The subscription API plan is considered appropriate when delivering only useful APIs functionalities rather than bulk quantities. It's simply a fee for giving access to the set of APIs.

- **Freemium:** This model states that publishers can offer the free plan to the consumers up to some limit, but when they exceed the limit, ask them to subscribe to the plan to continue the APIs services. This is the best model as consumers get to know the benefits of APIs, and if it's beneficial for them, they'll surely buy the subscription plans.

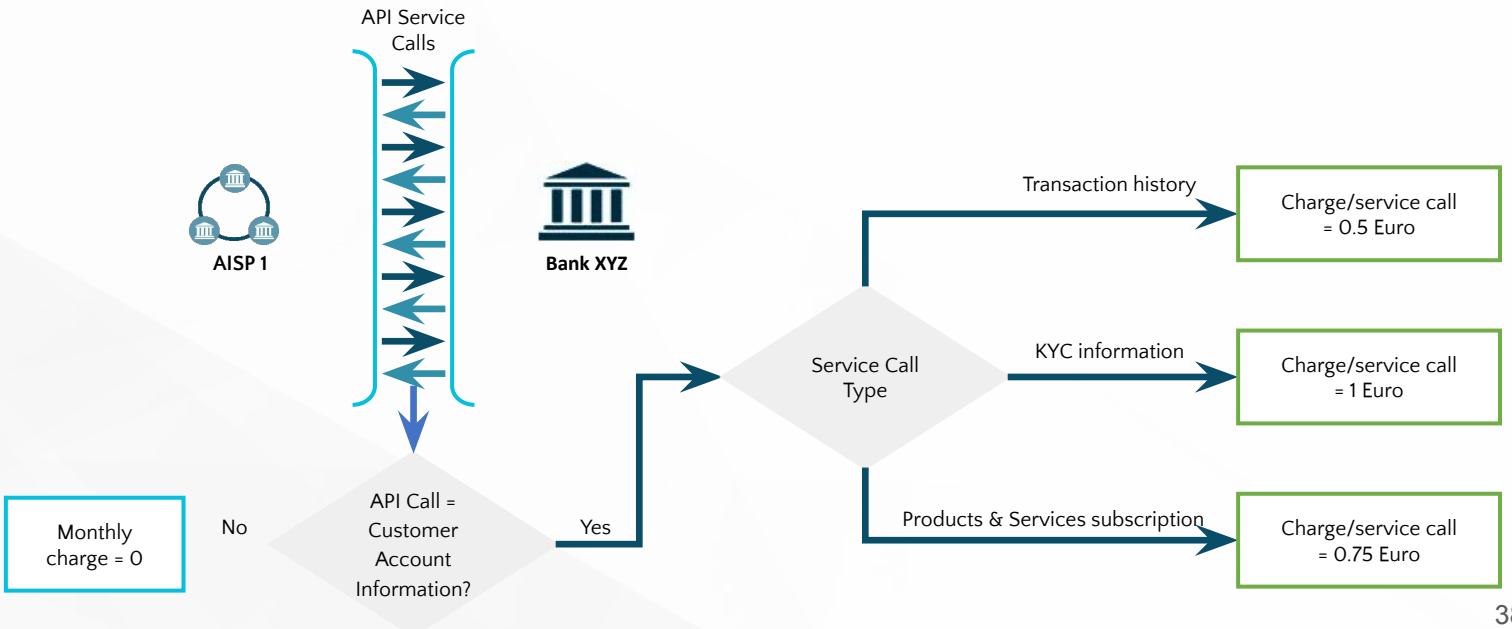
Bank XYZ

- Bank provides basic set of APIs for Free per month.
- API transaction beyond a certain limit will get charged per API call
- Value Proposition APIs (VPIs) will be paid



Bank XYZ

- Bank does not charge for customer information API calls
- Any other API service call gets charged



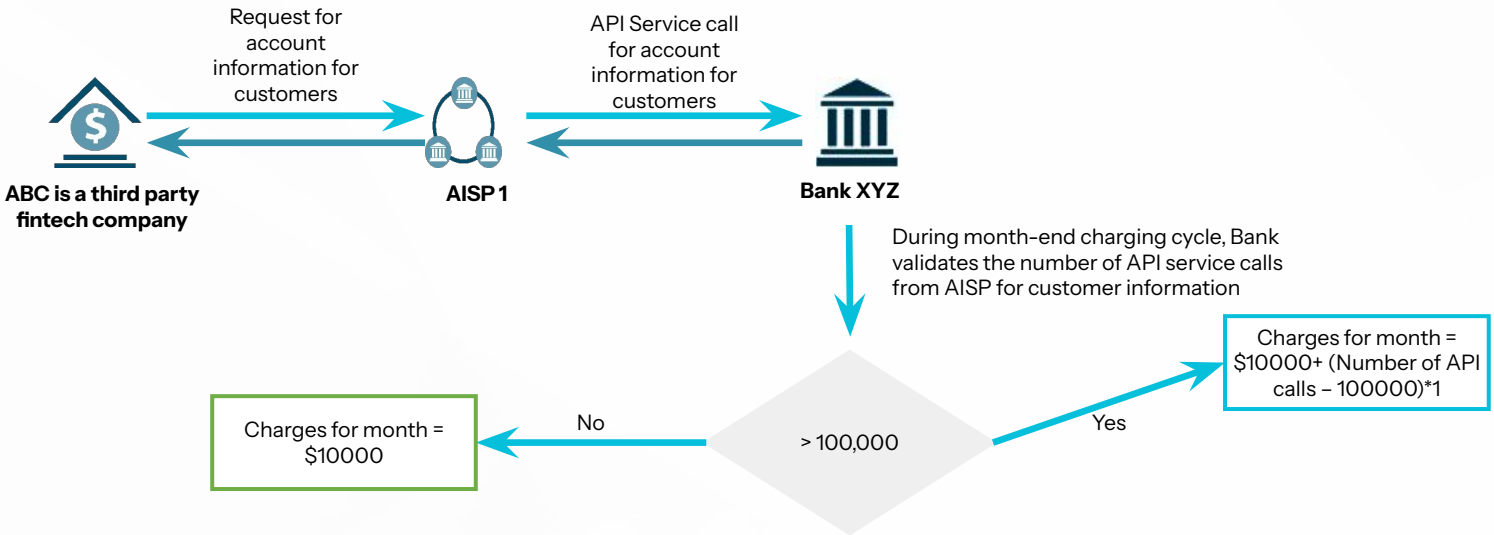
Tiered model

Bank XYZ

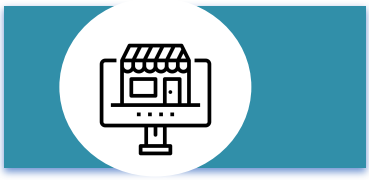
- Bank has various tiers for charging AISPs for customer information API service calls. Customers subscribes upfront to plan of choice
  - Silver – $20000 per annum for 100,000 calls
  - Gold - $10000 per annum for 100,000 calls
  - Platinum - $8000 per annum for 100,000 calls
- All calls beyond subscribed plan get charged at $1 per call

AISP 1

- Authorized AISP to carry out account and customer information aggregation
- AISP has a subscription of $10000 per annum for 100,000 customer information APIs with Bank



Revenue Share Model



A large well known company, like a bank or telecom company with a broad customer base could create its API marketplace

Invite its customer base to publish their APIs on the marketplace

Track the usage of the APIs per publisher

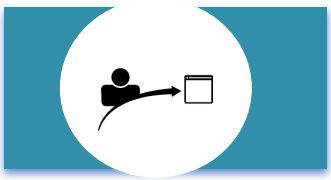
Charge the API publisher a fixed or variable fee based on the API sales

Try-it Model

A developer is given a key to access all the APIs for a limited amount of time – 30 to 90 days

Encourage the user to switch to the paid model as the expiry date is approaching

Group Purchase Model



A company is on-boarded to the developer portal

The company admin can invite 1 or more team members to the company

The admin will purchase the API on behalf of the company

The api key and secret thus purchased will be available for the entire team members

Let us deep dive into API Monetization with a use case from Telco

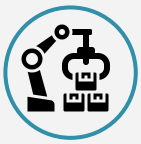
5G has been a game-changing technology which opens up a plethora of opportunities across various industries. When coupled with technologies like the Internet of Things (IoT) and augmented reality, it opens up the door to tons of network monetization opportunities. A few use cases around the same are mentioned below

Video surveillance and analytics

V2X, autonomous driving, vehicle maintenance, enterprise (B2B, B2B2X business models), consumer services

Immersive entertainment (live streaming, AR / VR solutions)

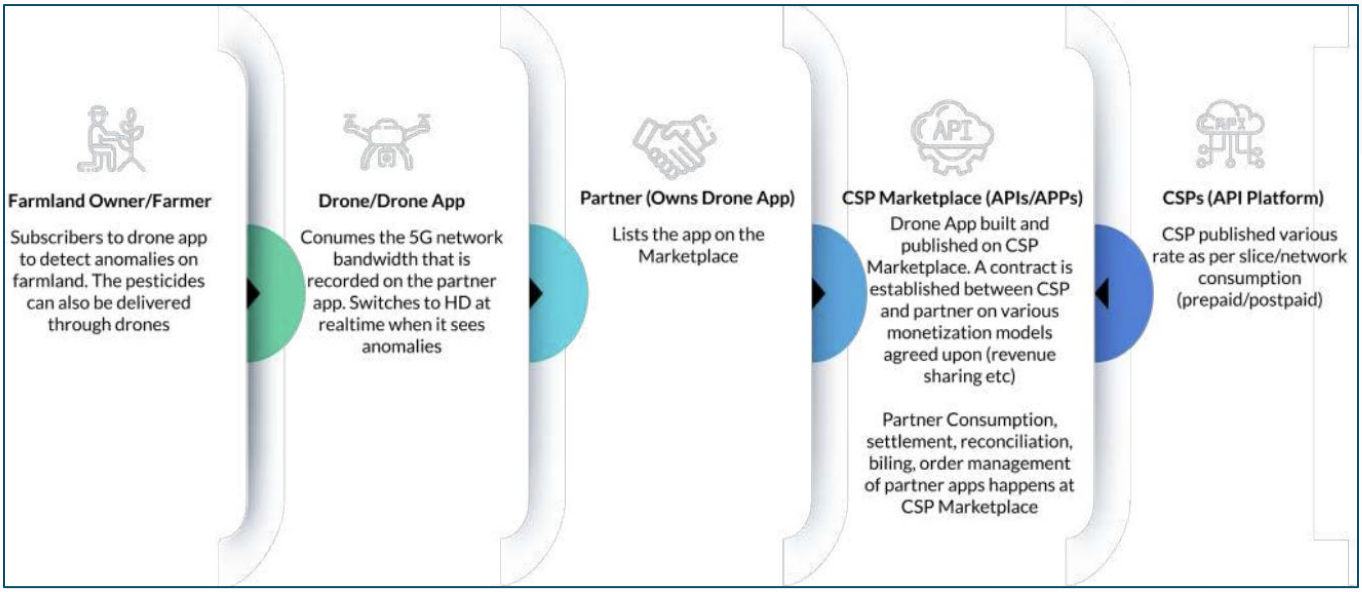
Connected stadium (fan experience)



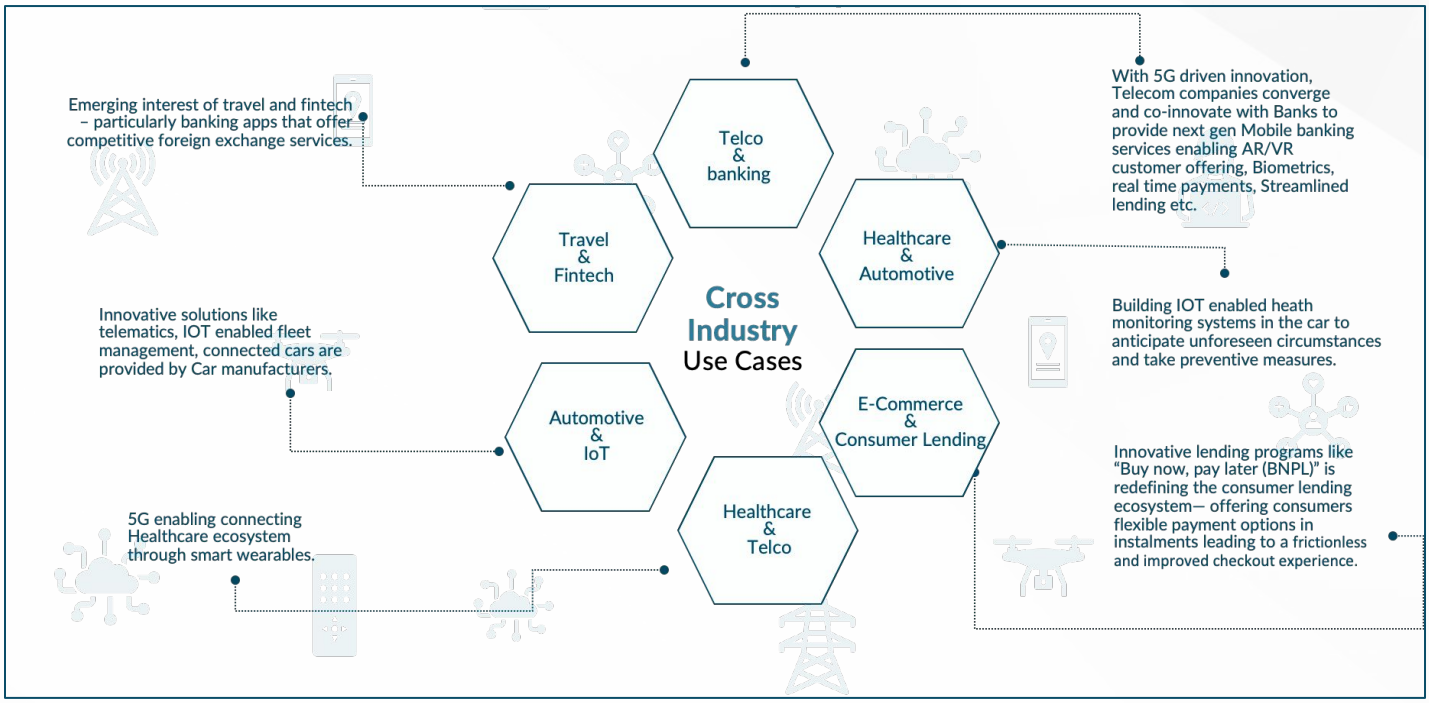
Industrial automation, remote monitoring, IOT platforms, streaming with AR / VR for remote assistance and guidance

Smart health, smart cities, smart homes

Drones As a Service (Surveillance, 5G signal QoS assessment)


Farmland Owner/Farmer
Subscribers to drone app to detect anomalies on farmland. The pesticides can also be delivered through drones
Drone/Drone App
Conumes the 5G network bandwidth that is recorded on the partner app. Switches to HD at realtime when it sees anomalies
Partner (Owns Drone App)
Lists the app on the Marketplace
CSP Marketplace (APIs/APPs)
Drone App built and published on CSP Marketplace. A contract is established between CSP and partner on various monetization models agreed upon (revenue sharing etc)
Partner Consumption, settlement, reconciliation, biling, order management of partner apps happens at CSP Marketplace
API
CSPs (API Platform)
CSP published various rate as per slice/network consumption (prepaid/postpaid)

Cross Industry use cases



Telco & Banking

Telecom operators and retail banks have been converging for years. As remaining barriers vanish and extrinsic factors push further convergence, banks will see increasing competition from telecom operators, which will aggressively enter into financial services, especially in transactional lines of business. Therefore, there is a need to explore opportunities for complementing each other to attain greater synergy.

The reality is that telecom banks have all the ingredients to become game changers and enablers of higher-value financial services, both for the retail and SME market. Clear signs of this trend are showing, including the involvement of telecommunications market leaders in banking activities, commitment to joint ventures instead of single ideas, and the introduction of a comprehensive product portfolio instead of focusing on payments only.

Retail banks have been eager to push digital channels, such as fixed and mobile, as an important part of their operations. Since Wells Fargo started offering services to its clients through the web almost 20 years ago. Today, all banks face the digital age with a broad set of solutions, from pure channel adaptation to radical changes in their business models. In parallel, telecom companies have been adapting their customer relationships or converging communication and media offerings.

A tremendous transformation is taking place in the financial services sector that requires banks and telecommunications companies to use Mobile Financial Services (MFS) to engage customers that are embedded in mobile and social ecosystems.

On one side, banks contribute an existing financial network, infrastructure, and strong brand recognition, while contending with regulatory compliance. Telecom operators, meanwhile, deliver wide distribution networks, mobile network infrastructure, and an expansive customer base..

- **Telcos are moving in —** Traditional financial institutions are partnering with telcos. These partnerships are leading to expanded digital service offerings for the underbanked in developing markets and have transformed how the people within those markets complete transactions. The rise of financial inclusion due to these partnerships will have a clearer impact across emerging markets such as Southeast Asia, India, Latinamerica, and Africa. This impact has already been noticed in Africa. In Kenya, for instance, financial inclusion has risen from 60% to 80% only in the last five years.

- **Swift from prepaid to financed devices —** With the expansion of device financing programs, it is easier than ever for prepaid subscribers to buy a new smartphone. Telcos offer consumers--who are typically excluded from financial services--the possibility of building their creditworthiness. The proliferation of smartphones is necessary to support a rise in financial inclusion. Through the use of data science and emerging transactional technologies, more financial institutions and telecom companies will now be primed to offer new sources of financing for other goods besides smartphones or data plans.

- **Win-win cooperation is now possible —** Telecom companies can reach their current customers and extend their existing portfolio of products by including financial services, which leads to additional profits. Customers bound by more products are less likely to change providers, which leads to a reduction in churn rate and in the costs of maintaining clients. However, data sharing is more important. Clients already acquired by a telecom bank provide additional and valuable information, such as spending habits, which is very useful when offering telecommunications-related products.

- **Added value for customers —** From the customer perspective, the main advantage is a reduced financial burden. Right after launching, Telecom banks should make an effort to revamp their offering to attract as many customers as possible. Free current accounts, higher interest rates on savings accounts, and cashback features for mobile payments or instant transfers are just a few examples of how Telecom banks can easily bring new value to their customers. Convenience is also crucial when it comes to perceived value from customers. Now, Telecom companies can add banking products, allowing customers to purchase, manage and track everyday payments from a single place

So far, most of the cooperation and alliances between banks and telecom companies have focused on enhancing mobile payments and increasing the usability of payment-related technologies. While the scope of services offered is gradually increasing, it is still far from the complete product portfolio of a traditional bank.
A joint venture that claims to be the first European strategic alliance between telecom companies and banks comes from Spain, where Santander, CaixaBank, and Telefónica created Yaap, aiming at developing business opportunities and creating an online community of merchants and customers seeking offers, discount or promotions, in the second quarter of 2013. This venture was backed by a digital wallet payment service and claims to be the first European strategic alliance between banks and telecom companies.

Another example is the US subsidiary of T-mobile, which launched Mobile Money at the beginning of 2014, in this case, without any bank participating. They offered a prepaid account wired to a mobile banking application and debit card, allowing customers to make transfers, payments, and ATM withdrawals.

Automotive & IoT

IoT has brought in immense transformation in the automotive industry and embedded IoT solutions have transformed cars into a “near-artificial intelligence.”

Case in point: Cellular Vehicle-to-Everything (C-V2X)

C-V2X is an umbrella term for the IoT network that connects a car with different road infrastructure objects. They all can be divided into “device to device” and “device to network” categories.

The first one includes V2V (exchanges data about a vehicle location, speed, and dynamics, and also helps prevent collisions); V2I (exchanges data between a vehicle and road infrastructure (traffic lights, lane markings, and toll booths), and helps drivers to save their time by managing traffic and flows or queues); V2P (allows a pedestrian to connect with C-V2X via the mobile app, where he/she can check information about city transits or taxies).

The “device to network” category indicates vehicle to network or vehicle to cloud connection. This type allows the vehicle to be connected with cloud-based services or Intelligent Transport Systems (ITS). Such services and systems can provide real-time data regarding weather conditions, traffic reporting, etc.

E-commerce & Consumer lending :

Today, "buy now, pay later" accounts for only a small portion of overall card spending. But amid the pandemic-fueled e-commerce boom, this alternative model may be poised to disrupt the $8T US payment card industry.

As online shopping surges amid the pandemic, “buy now, pay later” (BNPL) companies have dominated headlines — attracting online, money-conscious shoppers with seamless delayed payment alternatives that bypass the usual fees.

With e-commerce volumes jumping forward, an estimated 4-6 years due to worldwide lockdowns, consumers and merchants have increasingly looked to buy now, pay later solutions to alleviate financial pressure and to meet online shopping demand, respectively. BNPL players like Klarna, Afterpay, and Affirm are well on their way to becoming household names, with new user growth and transaction volume exploding.

By 2025, the global BNPL industry is expected to grow 10-15x its current volume, topping $1T in annual gross merchandise volume by some estimates. This growth trajectory has incumbents paying close attention and increasing their efforts to improve the digital user experience.

Healthcare & Telco

Telcos play a crucial role in digital health, providing connectivity, and offering end-to-end services, supporting healthcare providers in implementing and managing new digital solutions. The opportunities for digitization in the healthcare market are numerous. Telco Operators can therefore consider introducing a host of new technologies, applications, and potential services to improve efficiency. There has been a lot of hype around new network technologies such as 5G, edge computing, the IoT, and the new revenues they could bring to the telecoms industry. However, even with these new technologies, providing connectivity alone will not drive sustainable growth for operators. We are therefore urging the operators to move beyond their core connectivity offerings and play further up the value chain, exploring the vertical opportunities within application enablement and solutions and applications.

There is a lack of adequate and quality healthcare services in rural and urban areas. This problem is further compounded in developing countries that often have a shortage of facilities and personnel. Healthcare service providers and telecommunications providers collaborate and co-innovate to fill this gap using a digital health ecosystem to provide quality primary healthcare to all.

For example, Reliance Jio provides the connectivity backbone. Since launching in India in 2015, Jio has amassed over 300 million users in India and provides the largest 4G network in the country. As well as typical telco operations, Jio is focused on providing digital services. To enable healthcare-related digital services, Jio has launched JioHealthHub – a platform that provides "a complete primary healthcare solution in the palm of your hand."

TELUS Health is an organization that offers a benchmark for what operators could achieve in healthcare, beginning its journey over a decade ago. By continuously building and building expertise, following a clear and patient strategy, with strong buy-in from C-level down to the field force, TELUS Health has built a practice that now accounts for ~8% of TELUS' total revenues. It has carved out a permanent role in Canada's healthcare system, and so that 8% will only continue to grow.

Fintech & Travel

Fintech offers innovative payment solutions to the Travel and Hospitality industry.

The Travel industry is beginning to embrace more modern payment methods, including Google Pay and Apple Pay. With Open Banking transactions coming up, travel industries begin to modernize further, and new payment services enable a much smoother banking experience and enhanced customer satisfaction. Open Banking also offers plenty of advantages to traveling operators, including lower transaction costs. For consumers, the benefits include faster, more user-friendly payment experiences and increased security

Fintech payment platforms are enabling travel and tourism companies to integrate some interesting and increasingly popular alternative payment methods.

- **Pay by Link:** Although not a payment method as such, payment links act as one-time digital invoices containing booking data and payment details. Links can be sent by email, messenger, or other methods, and upon receipt, customers can pay using their preferred method. Payment links allow the cost of a travel booking to be easily split between a group of people, whilst 3DS technology helps to reduce the chance of a chargeback.

- **Buy Now, Pay Later:** Effectively a point-of-sale loan, BNPL plans allow customers to pay in several smaller interest-free installments without lengthy credit checks. 46% of travel and aviation industry survey participants thought that their customers needed more options and flexibility with BNPL models. So it's no surprise to see a rise in interest for this payment method in the travel sector — though providers are responsible for informing and educating clients about the financial risks of BNPL schemes.

- **Cryptocurrencies:** Although we're a long way away from seeing cryptocurrency payment options at mainstream travel agencies, high-end services such as private aviation operators are increasingly offering digital currency payment options for high-ticket bookings. In ECOMMPAY's survey, 34% of businesses interviewed identified the rising demand for crypto payment options as a challenge, so momentum is building for popular currencies such as Bitcoin.

CONCLUSION

04 SEGMENT

How DAC fits into the ecosystem

DAC understands the importance of creating a robust and innovative API ecosystem. Adapting to a powerful mechanism called Application Programming Interface is essential to generate good ROI and revolutionize businesses to outbid competitors in the current digital age.

Our in-house team has solved all the complex issues of the telecom and financial businesses all over the UK and US with our suite of products & solutions and helped them in accelerating their API ecosystem

Our Background

DigitalAPICraft, through its products and services, helps global brands establish their API Ecosystem and transform into a truly Experience Enterprise. As a leading end-to-end digital transformation partner, our API-led approach enables banking, healthcare, telecom, insurance & retail companies to offer delightful customer experience, transform business processes and boost operational efficiency.

DigitalAPICraft has been awarded “Delivery Partner of the Year for APAC 2017- Google Cloud” and is a premier Google - Apigee partner. Over three consecutive years (2020, 2019 & 2018), DigitalAPICraft is recognized as one of the fastest-growing technology companies by Deloitte in its Technology Fast 50 India and twice (2019 & 2018) in Technology Fast 500 Asia pacific rankings.

Since our inception in 2015, we have:

Located in USA, UK, and India, and with customers across the globe, DigitalAPICraft brings extensive product and platform experience to help enterprises with digital strategy and consulting, disruption engineering, end-to-end DevOps, experience engineering, and much more.

DAC's suite of Products & Solutions

1. One APIMarketplace

Enterprise-grade, white-labelled product to efficiently publish, consume, collaborate and govern all your APIs, developers, product owners, consumers and partners.

Enterprises are creating 1000s of APIs today. Your API ecosystem needs to evolve to manage the complexities of usage and consumption, collaboration, management, documentation, and publishing of 1000s of APIs, and management of 1000s of users and developers. One APIMarketplace solves the problem. It is API platform agnostic and seamlessly connects your APIs, developers, product owners, consumers and partners to accelerate innovation and deliver API ecosystem experiences like never before.

A well-developed API marketplace allows developers to publish their APIs smoothly and seamlessly. It serves you with search capabilities, categories, and collection. Subsequently, developers can easily find the particular type of API or their functionality to subscribe to the plan. Furthermore, One API Marketplace enables developers to compare the pricing. Besides, it provides them with comprehensive information about the listed APIs so that they can have informed decisions according to their affordability.

One API Marketplace enables developers to compare the pricing. Besides, it provides them with comprehensive information about the listed APIs so that they can have informed decisions according to their affordability.

2. Open APISandbox

Create world class Developer experiences for your developers and empower your 3rd party ecosystems with rich, smart and transactional Open APISandbox.

Accelerate innovation and increase collaboration between 3rd parties and Enterprises by offering production-level Sandbox environments to minimize complexities and increase API adoption.

Enterprises can now leverage low-cost Sandbox, enable 3rd party ecosystems (Fintech, Healthtech, Edtech, etc) to quickly adopt APIs and create ecosystem driven products efficiently using smart transaction sandbox.

Some of the key highlights of Open APISandbox

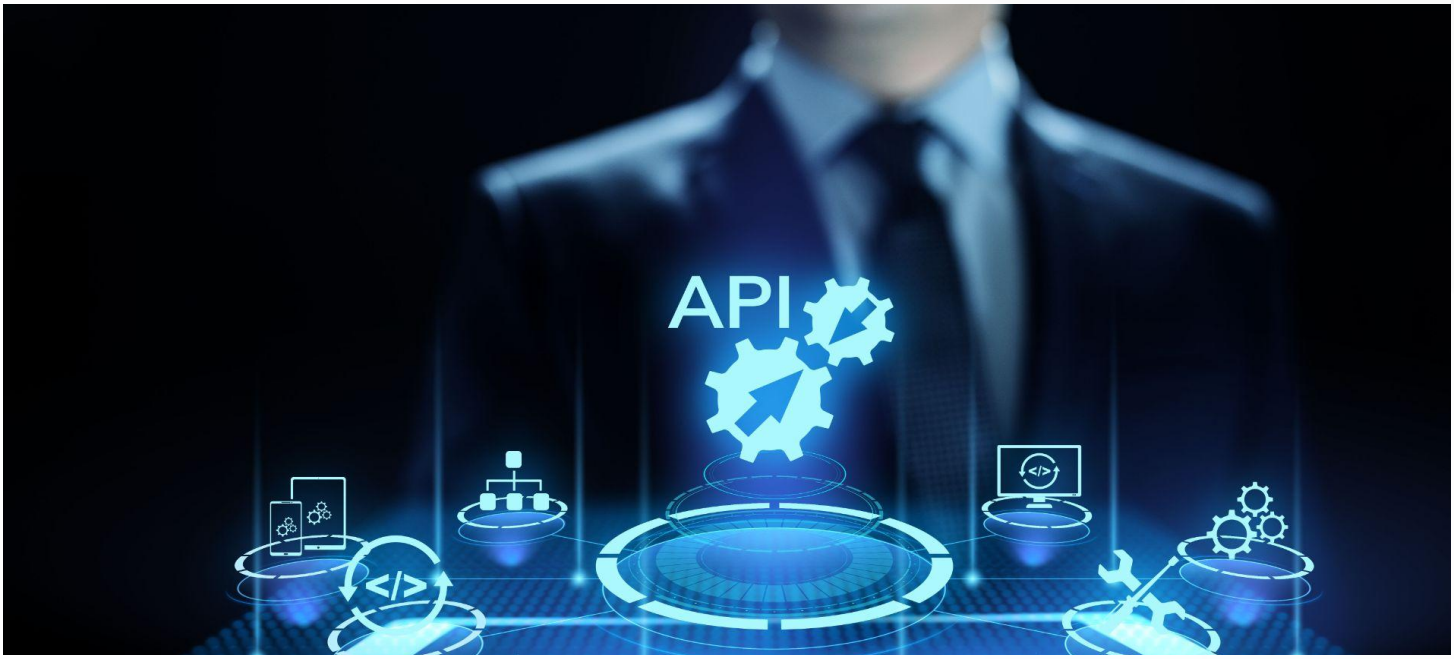
Smart, Transactional & Data driven

Robust, Portable & Scalable

Craft Great Developer Experience

Multi-tenant Testing Environment

Self-serving platform



3. One APIHub

An enterprise grade internal API portal to aggregate, expose, index and document all the enterprise APIs in an access controlled manner. A purpose-built solution to centrally bring all APIs developed in your organization by a decentralized team for discoverability and increasing adoption of APIs, avoiding redundancy in API Development, to optimize developer experience across the entire development lifecycle with native integrations to your existing CI/CD pipeline, external API portal.

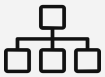
API landscapes are growing at every enterprise and are building many public and private APIs everyday and everybody wants to make sure that they are keeping up with the growing demand of publishing and consuming APIs. With APIs and microservices growing both organically and also enterprises who are going cloud native are building at speed and scale, Internal API Hubs have become an important consideration for many organizations. Building an enterprise-wide, centralized, service catalog and expanding it to beyond the APIs has become an extremely important strategy for enterprises.

Some of the key highlights of Open APIHub

Catalog of Internal services from Rest APIs to GraphQL, AsyncAPI, gRPC, SOAP

Team Info, Hierarchy

Analytics, Audit Information, deployment history



Service Mapping and Service Hierarchy

Deployment Stages, Versioning, Metadata

4. One APIDapper

API Documentation is one of the salient aspects of API Ecosystem and developer journey that helps the developer keep up with the rapid iterations and updations, thereby increasing the API adoption. Conventionally, text editors and collaborative software like Confluence or Open Source Wikis have been used to produce API documentation. The documentation typically explains how to use and integrate an API and provides information on how to work with the API functions.

One APIDapper is A UI rich documentation tool, One APIDapper offers detailed representation of your OpenAPI specs right out of the box. Dapper was created by DAC to improve the quality and usability of API documentation,thus enhancing developer experience by providing a flexible approach to style and structure the documentation pages. As a tool Dapper can be used for generating documentation from OpenAPI (aka Swagger) definitions.

5. DAC Innovation Hub

The innovation hubs or collaborative design labs act as focal points for establishing innovative collaborations and joint-development opportunities with 3rd party businesses. Starting with the key identified 3rd party players and the proper development environment results in a high-performing and inventive culture. By working together, the 3rd party ecosystem becomes much more productive and moves much more quickly towards their goals.

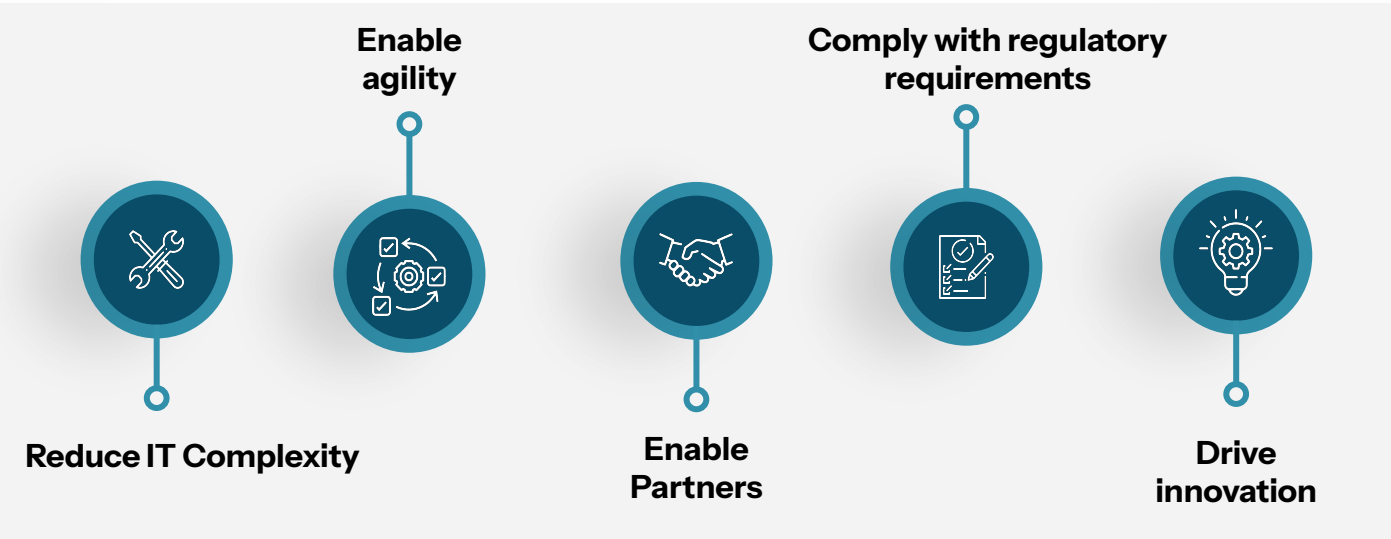
Solution for Banking

One APIMarketplace

Open Banking has enabled fintech and third parties to use bank APIs, resulting in expanding partner ecosystem. Opportunity for Banks to monetise their APIs and generate alternate revenue streams. BaaS enables 3rd parties & fintechs to connect with banks' systems through APIs to co-innovate and build banking products.

Banks Plan to increase their use of APIs to reduce IT complexity and enable agility and Partners

Respondent's ranking of key goals



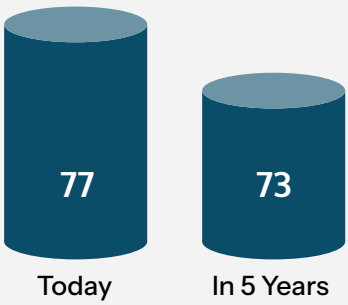
How many APIs do you currently have and how many do you plan on having in 5 years ?

Distribution of APIs, %

Internal APIs

Internal APIs
APIs used by developers within the enterprise

Relative Growth



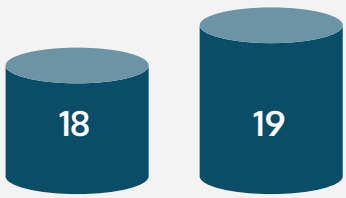
Absolute Growth :

X 2

External APIs

Partner APIs
APIs used by Business partner

Relative Growth



Absolute Growth :

X 2

Public APIs APIs used by external

X 3

DAC's OneAPI product line is a One-stop shop for all developer needs.

One APIMarketplace

An out-of-the-box enterprise grade unified developer portal that can connect to multi-gateway, multi-cloud seamlessly.

- 500+ Core Banking APIs-as-a-Service
- White-labelled and API Platform Agnostic
- API Monetization and Commerce Ready
- Open Banking and PSD2 Compliant APIs
- Tailored for Open Banking API portal

Open APISandbox

A smart, transactional, production-like Sandbox that supports banking as well as regulatory APIs

- Retail & wholesale Banking API
- Open Banking and PSD2 Compliant APIs
- Open Banking Sandbox-as-a-Service

One APIHub

A self-service internal API publishing and management system to promote innovation and scale cloud, agile and DevOps initiatives.

- Catalog of Internal services from Rest APIs to GraphQL, AsyncAPI, gRPC, SOAP
- Analytics, Audit Information, Deployment History
- Configurable workflows for API publishing, reviews and approvals
- Integrates with API lifecycle and governance tools and CI/CD pipeline.

Advantages of DAC OneAPI Product Suite in Banking

One APIMarketplace

Enterprise-grade Portal
A world class, pre-built developer portal that can be customized to the banking enterprise needs faster. A secure and flexible portal that comes with great onboarding, discoverability, stakeholder management and documentation.

Easy Content Localization
Maintaining separate localized portals in different languages across the globe can never be a problem anymore. One APIMarketplace ensures local language delivery with consistent developer experience across the board.

Pre-built Industry Specific Core APIs
Banking enterprises can now take advantage of core industry-specific APIs to meet their digital needs. With over 500+ core banking APIs, Open Banking and PSD2 APIs, One APIMarketplace has you covered to meet the regulation standards and compliance.

Build a Vibrant App-API Ecosystem
Control and deliver a seamless API ecosystem experience by unifying various API consumers

Strong API Governance
Efficiently manage and streamline adoption, access, audit, analytics and deployment across your internal and external API ecosystem

Suite of Connectors
Got different API types across multiple gateways? Working with multiple or hybrid cloud setup? One APIMarketplace has you covered. Suite of connectors built for leading gateways to help you innovate with minimal investments.

Pre-built workflows & Accelerators
Leverage a host of workflows from on-boarding, registration, code review and submission, monetization to support. These meticulously crafted accelerators and frameworks get your programs up and running in no time.

API Commerce and Monetization
Highest flexibility in offering API packages and rate plans. Banks and Financial Enterprises can now bundle plans, manage catalogues, subscriptions and monetize APIs with ease. One APIMarketplace leverages Apigee Monetization and App Monetization through full commerce module integration.

White-labelled, API platform and Cloud Agnostic
Leverage a pre-built, enterprise-grade marketplace that is compatible with your existing API Gateways across multiple clouds

Connect External Partners and Consumers
Extend your internal Banking API ecosystem effortlessly to your external API ecosystem to easily find, connect and manage their APIs

Enhanced Developer Experience and Efficiency
Easily customize and optimize your developer journey. Increase App-API collaboration and efficiency by offering one unified solution for your API ecosystem

Open APISandbox

Craft Great Developer Experience
Offer the best experience to your API ecosystem starting from replicating the actual production environment.The smart sandbox enables enterprises to send back curated or canned responses for each API, transactional responses like payments and dynamic responses with business rules applied on responses.

Multi-tenant Testing Environment
Set up isolated environments or manage multiple environments for all functions, stakeholders and developers to innovate faster. Hosts an intelligent versioning and environment management feature with extensive consent management module to help cater to all your access related scenarios. Scaling up multiple environments is just a few clicks away.

Self-serving Platform
Completely automate registration, onboarding and third party management. Eliminate complexities and ease usage with extensive know how documents and user guides to make adoption effortless. Offers enhanced capabilities to test own data and help accelerate implementation

Smart, Transactional & Data driven
Leverage a fully transactional Open API sandbox with smart analytics and reports engine. Easily simulate, manage and customize errors at business level. Banks can make the most of try out sequencing, advance data logics and performance simulation to achieve product perfection. Includes a fully integrated business rules manager to meet business requirements.

Robust, Portable & Scalable
Open API Sandbox platform leverages cutting-edge technology to offer the highest range of portability for banks and Financial enterprises to either deploy your sandbox locally or on any cloud. Offers the flexibility and robustness to spin up new sandboxes on demand so test multiple versions of APIs at the same time. Sandbox platform will be built to support multiple API Gateway and helps easily scale the number of sandboxes needed.

Case Studies

HSBC - Dev Portal & Wholesale Sandbox

Customer is a leading financial services conglomerate headquartered in the United Kingdom & serving up to 40 million customers across 60+ countries. The focus was on putting the full power of the bank in every customer's pocket, with easier and more secure digital banking.
We offered our One API Product suite to one of the leading player in the banking sector and achieved a monumental shift in how teams work, thereby pushing the customer a step closer to its digital transformation journey

- Unified Portal to onboard different API platforms, including Apigee, Azure, AWS & Mulesoft
- Easier onboarding & documentation management to enhance the developer experience
- Strong role-based access controls with complex workflows & onboarding scenarios
- Scalable & Robust Sandbox for bank's wholesale & Open Banking (regulatory) APIs
- Strong collaboration between various business units in terms of API Discoverability Adoption & Usability

Metro Bank- Open Story (A leading Challenger bank in UK)

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Solution for Healthcare

One APIMarketplace

- The biggest challenge healthcare, organizations are facing is data Interoperability and orchestration.
- It is time to effectively and securely share and leverage healthcare data
- In partnership with Google Cloud;s Apigee, DigitalAPICraft's Solution to meet CMS and ONC Compliance and interoperability
- Enabling healthcare institutions go-to-market with a digital marketplace and enriched functional application without disrupting your existing digital applications
- Ready to go digital healthcare enablement supporting governance, compliance and regulations while plugging into your existing healthcare infrastructure

One APIMarketplace for Healthcare – Value Adds

Run on any private or public Cloud

Google Cloud Platform · amazon web services · Azure · Private Cloud

Scale at Cloud Magnitude

Run all healthcare apps at cloud scale; consistently deliver to meet your healthcare enterprise challenges.

Easy on Investments, Strong on Functionality

Use the best of Open Source Software

Touch the Last Mile Finish Line

Don't just stop at Interoperability. Reach the Experience Healthcare finish line and transform into an Experience Enterprise with ease.

Ready-to-use artifacts

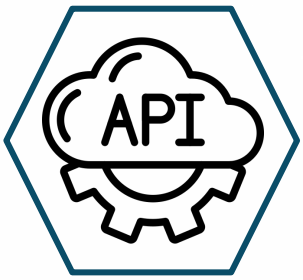
- Healthcare FHIR APIs and Microservices
- Experience FHIR APIs and Microservices
- Healthcare SMART Apps
- Healthcare FHIR Developer Portal

Innovate at Speed

Develop and deploy all your software, artefacts, custom code, apps etc. continuously, and faster.

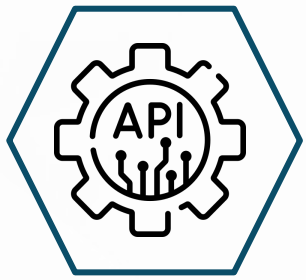
One APIMarketplace for Healthcare

Build your connected healthcare API ecosystem with advanced Healthcare Interoperability and Regulatory Standards compliance.

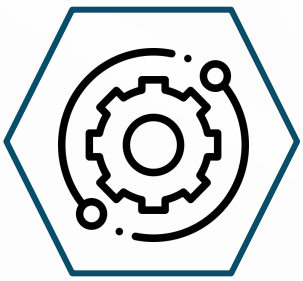


Built on top of One APIMarketplace

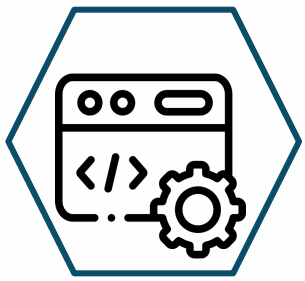
Achieve Compliance with CMS/ONC Rules Faster



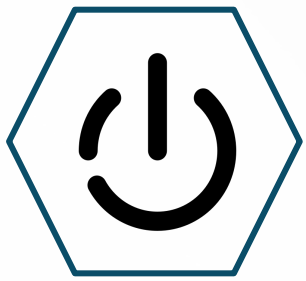
Pre-built SMART on FHIR APIs



Supports multiple FHIR versions: DSTU2, STU3, R4



Back end Store support for standards like FHIR R4, DICOM and HL7 V2



Powered by Apigee and Google Cloud healthcare accelerators

Key Features

Integration with Apigee

In-built integration with the Apigee Edge API platform, allowing the app and API publishers to leverage credential generation, usage metering, analytics and monetization.

API & App Monetization

Set up packages best suited for your business; offers flexibility to tailor on demand packages, easy and intuitive package pricing.

Integration with CRM systems

Easy integration with leading CRM systems; offers great user experience by enhancing lead generation, dispute resolution, process updates and much more.

Team Feature & Governance

Allows multiple teams within the organization to collaborate on various aspects of the marketplace such as documentation, blogs, forums, and other asset.

Highly Extensible

Built on a modular architecture; quickly and easily extend the platform for new features for faster time to market.

Solution for Telco

New technologies continue to disrupt the communications industry and 5G promises to bring countless opportunities to the Telecom companies in accelerating Digital Transformation. The transition of Telcos from selling services to selling value-added services including system security, infrastructure fault tolerance & cloud performance.

CSPs can now leverage the potential of 5G monetization systems to deliver the promise of 5G from day 1

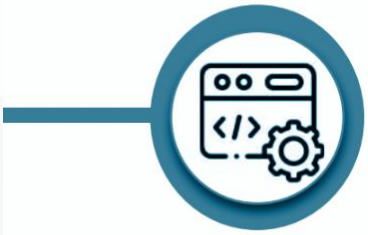
To securely open up their networks to partners for the first time, CSPs need the following tools

Robust API platform for 5G APIs

An API platform to help partners connect with CSP's 5G network for easy & secure exchange of information

API Marketplace

- Partner onboarding, registration etc
- One platform to configure, price & quote services
- Helps CSPs orchestrate APIs with external partners



Developer & 3rd party ecosystems

A reliable ecosystem to let developers innovate quickly & help businesses bring new offerings

How DAC products are shaping the Telco industry through our One APIMarketplace Product suite

01 Our APIMarketplace will enable you to accelerate customer success by delivering applications across devices

02 Our marketplace offers plethora of opportunities to create new business models to let partners & developers monetise or extend your services through apps

03 Offers amazing flexibility to design the rate plans and packages for monetization

04 Seamless integration with payment gateways

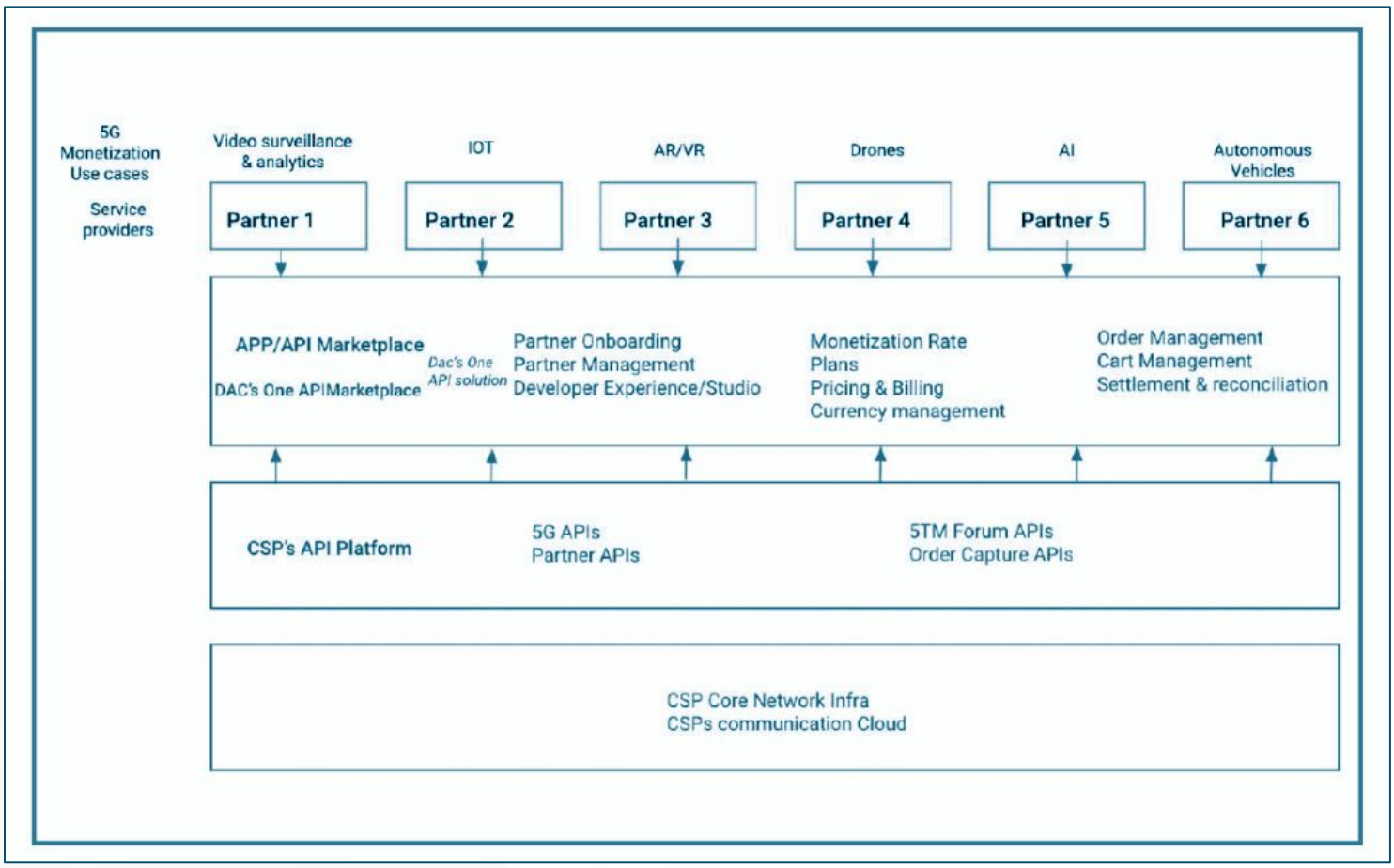
05 Helping developers/partners tap into the global market

06 Innovation around applications & APIs

07 Enable developers to extend Telco services & create applications

08 Assist developers to tap into the global market & add maximum value to customers

09 Explore agile techniques of Internet companies



DIGITAL APICRAFT

www.digitalapicraft.com