



TRANSFORMING CONSUMER BANKING WITH OPEN APIs

Introduction

In the last decade, retail banks have seen major changes in their ecosystem. Disruption from new age financial technology companies ('Fintechs'), 'Digital Only' banks, non-traditional players, along with the changing regulatory landscape and customers' ever rising expectations has forced banks to adopt the latest technologies and widen their offerings. These changes have brought some fundamental shifts: Fintechs have become fundamentally important to banks, banking has become channel indifferent, banks are opening up their data and customers are more willing to move swiftly for better services.

There is another regulation driven change that is transforming banking and pushing banks to open-up their applications and the data. Being incumbent, banks have always had goldmines of data, but were shy to experiment or share their data with the outside world. Now with open APIs, banks are opening-up, putting the industry at a tipping point.

If we look at the recent past, retail banks were highly reliant on legacy systems and resources were scarce. Even if they wanted to open up, the bandwidth was not there to support this. Now the environment is more conducive for banks to lead such kind of transformations. Banks are more willing to outsource areas that are not their core competency. Legacy systems are being transformed, more banks are willing to be on the cloud, and micro services are opening windows to internal systems. Fintech's innovative products and regulations have also helped a lot in this. Fintechs have become fundamentally important to banks and they need each other a lot more now.

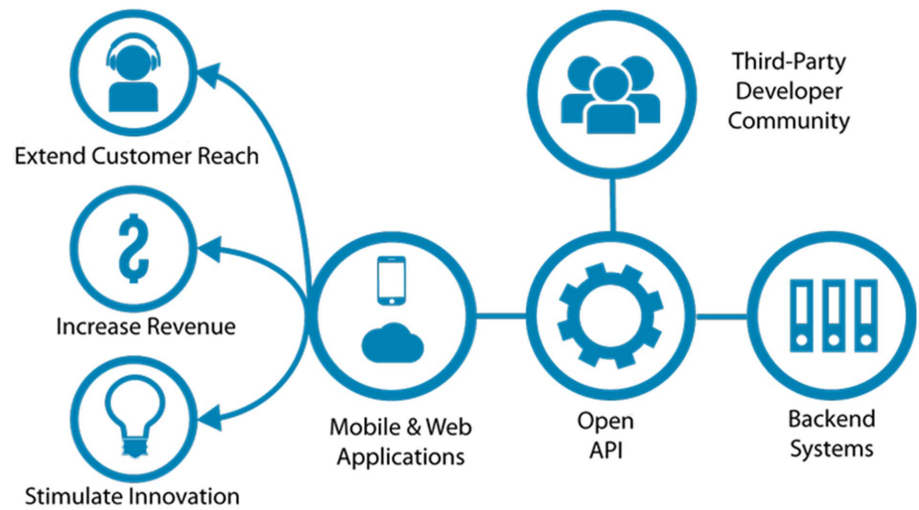


Figure 1: Open API's Business Flow

Whether its Legacy Modernization, Data reservoirs, Customer Center transformation, Cloud Enablement/ Migration, integrating Digital Platforms or Fintechs - APIs are an integral part of this technology adoption, and are becoming pervasive.

APIs have helped banks open their doors for inventive and appropriate solutions and are helping them in their digital transformation. In addition, Banks are realizing that monetizing APIs can open additional revenue streams by connecting business processes, content, data, internal teams, channel partners and developer network in secure and easy way.

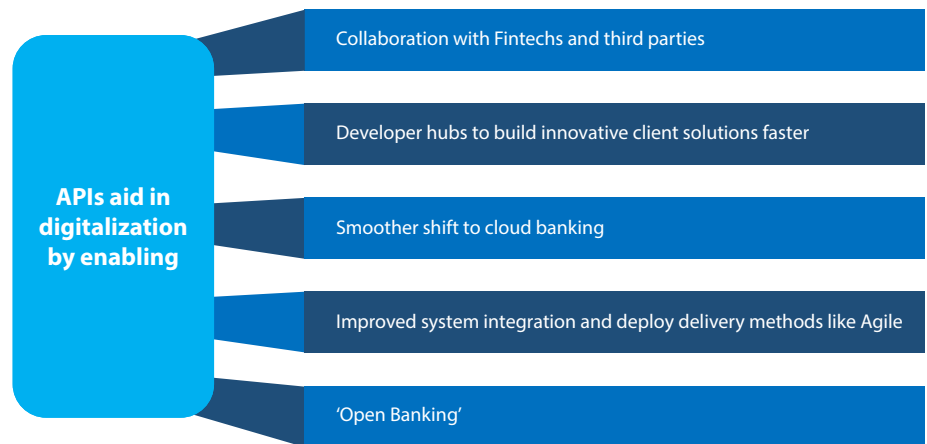


Figure 2: How APIs aid digitization

What are banks across the globe doing?

Using internal/ private APIs, retail banks are improving their organizational structure, internal communication/ collaboration and to speed up digitization. As per HSBC¹, APIs have played a pivotal role in their digital transformation. ING² used APIs as one of the main tools to transform their IT operations.

The biggest push for API adaption has come from the regulators' take towards the issue of data ownership. As per new European regulations like PSD2, 'Open Banking Directive', retail banks now have to share customer data with peers and other vendors. For this, banks have to open up APIs for third-party developers to build applications and services around banks and financial institutions. This is pitched as the biggest API-led innovation and can be a new banking channel in near future.

Competition among banks will really intensify and banks will have to ensure stellar levels of customer satisfaction to retain their customers. On the other hand, customers will have the wide range of choices, since data will be securely shared across institutions.

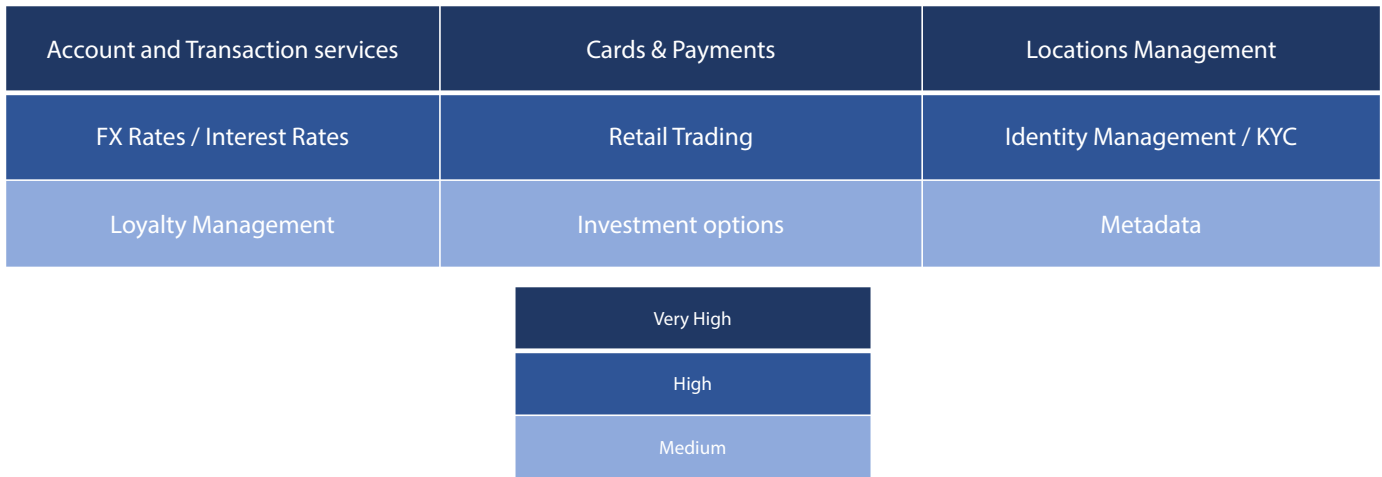
Retail banks across the globe are slowly opening up their applications' databases to the outside world. Improving client experience and financial confidence has become a priority.

European banks, backed by the regulations are leading from the front, prominently opening up in the areas of accounts and transaction services as well as location finders for banks and ATMs. Banks like Société Générale and BBVA are pioneers, but others like BNP Paribas and Barclays are gradually opening up their services.

Apart from large retail US banks like Citi and Wells Fargo, the rest are still not that open to public APIs. US banks are more in an experimental phase and are focusing more on partnering with Fintechs to widen-up their offerings. For e.g. JPMC, Goldman, Capital One partnered with Intuit to share data via APIs, adding personal financial management application to their offerings. JPMC signed up with the data aggregator Fincity to let the bank's customers share their data with third-party financial apps.

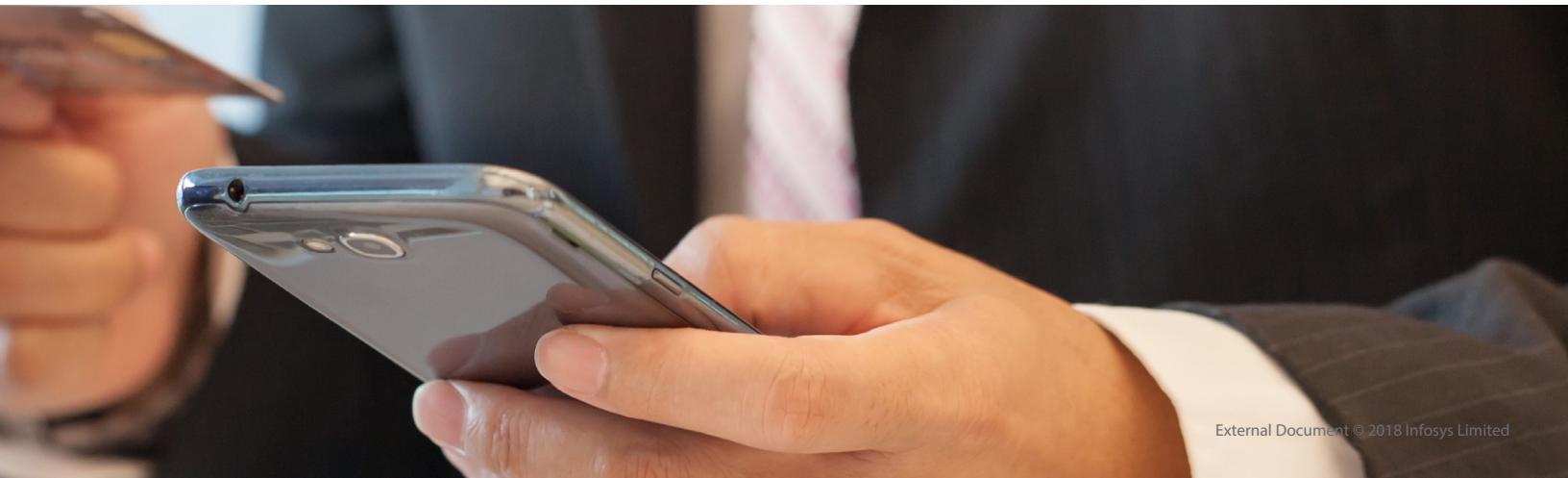
Open APIs are gaining traction in Asia, specifically in south-east Asia. Most commonly offered Open APIs are in the area of location tracking and foreign exchange rates. Barring few banks, majority of them have not made available APIs in more than one area.

Here is a heat-map# of the public API usage areas, based on the our research³ findings:



*Heat Map represents the API usage areas across banks, darker the color, more its offered by the banks

Figure 3: Open APIs offered by banks across the globe



Apart from the above mentioned prevalent open APIs, here are other services that can be explored by retail banks:

| Services | Usage | Advantages |
|--------------------------------|---|--|
| Core Banking | Enables third parties to plug directly into the core banking platform. | Fully digital account opening and facilitating payment process almost real-time. |
| Loan Origination | Integrates customer's data with a loan origination system. | Facilitates automated underwriting and helps incorporate back-office workflow for verification and decisioning. |
| Customer Onboarding | Helps integrating with multiple internal and external APIs, it provides data via a single point of response, providing customers' a seamless experience. | End users create their accounts entirely within third party application and prompt for their bank or credit union account info. |
| Product finder | Provides functionality for searching a variety of banking products for personal current accounts. | Enables users to get detailed information about different products with ease. |
| Digital lending | Retail banks can smooth out their digital lending processes through an API-based integration with any marketplace for loans and cards. | Makes the credit process more uniform, can digitize most of the lending processes, significantly reducing paperwork and thereby reducing the decision Turn-around Time. |
| Financial Planning | It gives third parties access to customers account data for use in apps and services like financial planning, spending analysis, tax preparation, portfolio advice and budgeting. | Allows bank to aggregate client's financial data, giving better understanding of their financial data, offer a holistic view of their accounts, along-with plethora of services. |
| Counterparty management | Creation and management of beneficiary information in an Omni-channel manner so that any changes made is represented across all banking channels. | Smooth flow of information and ease of banking for the customer. |
| Reconciliation services | Helps in providing electronic invoicing and payment and automated accounts reconciliation. | Can be used in the daily reconciliation service to investment banking clients who invest in different asset managers. |

Figure 4: Unexplored APIs

Challenges and risks

The growing use of APIs also brings in some business challenges for banks. To list a few:

- **Cybersecurity and Frauds:** As open APIs will lead to number of new connections and access points, it will increase the risk of misusing sensitive data and can potentially lead to the loss of data and fraud. Banks will have to use new layers of cybersecurity while opening APIs and sharing their customer data. Opening up APIs as-is can be tricky, as they will be prone to cyber threats. There should be a wrapper around APIs for securing them. Monitoring API management will become more important
- **Data Protection:** Banks have to be proactive in handling data privacy related issues. Account Information Service Providers (AISP) will have access to sensitive customer data like

account balances, loans, credit history etc. Applications must be at the same security level as back office systems and the balance between openness and security needs to be maintained optimally

- **Banks are apprehensive to open up:** Banks are cautious as they will not be able to control their data and subsequently customers. Banks have always considered their data precious and it will take some more time for them to be comfortable to share it
- **Banks will have to offer more customized and contextual solutions:** As available choices for customers expand as a result of introducing APIs, banks will have to introduce more tailored offerings to keep Fintechs and non-banking players from luring away their customers



High level Solution Approach

Retail banks will have to be better placed to handle technical challenges arising out of open APIs:

- **Real time processing:** The ability to handle demand from third parties in real time will be one of the biggest technical challenges that banks will face. Banks will have to do manage throttling, load shedding, debugging, managing capacity etc. all in real time
- **API lifecycle:** The banks' ability to manage the API lifecycle will be tested. Cleaning up and resetting for next versions, and maintaining them will be crucial. Communication mechanisms have to be strong as banks will have to inform multiple entities in real time. Usage/ support services for different consumers, channels and devices will have to be robust, for e.g. debugging specific consumers in real time
- **Quick turnaround:** Banks will have to deliver APIs quickly at lower costs, in response to changing market demands
- **Core Banking services:** The banks' core system must be robust, as this is a prerequisite to open banking, as just digitized peripheral channels will not help. The main issues to tackle will be:
 - Banks will have to expose their legacy core banking services as APIs and for that, they will have to unbundle their legacy core banking services
 - Banks have to make sure that additional load on core banking will have to be minimal. Transactions and processing in the core banking layer is expensive and scaling it up well on a short notice is tough
 - Third party interfaces would change in response to innovations in the market and banks will have to protect their core banking layer from changes that an "API Economy" requires



Infosys experience and case studies

Infosys is helping major banks transform through API-fication and Open Banking. 'Infosys API Economy' helps deliver a hyper connected digital ecosystem for the client's business. Our suite of offerings is helping enterprises extend market reach, streamline business processes and create

new sources of value. We have aligned our services catering to banks' key business priorities like core digitalization, cloud transformation etc. Infosys has a dedicated API CoE and partnerships with leading API vendors, making it easy for an enterprise to develop industry specific solutions. Using

IP based solutions we clearly differentiate from our competitors. Offerings⁴ like 'Digitalization of Legacy', 'Digital API Platform', 'Hybrid Integration & IPAAS', helps in open API deployment and has been letting our clients have an immersive experience.

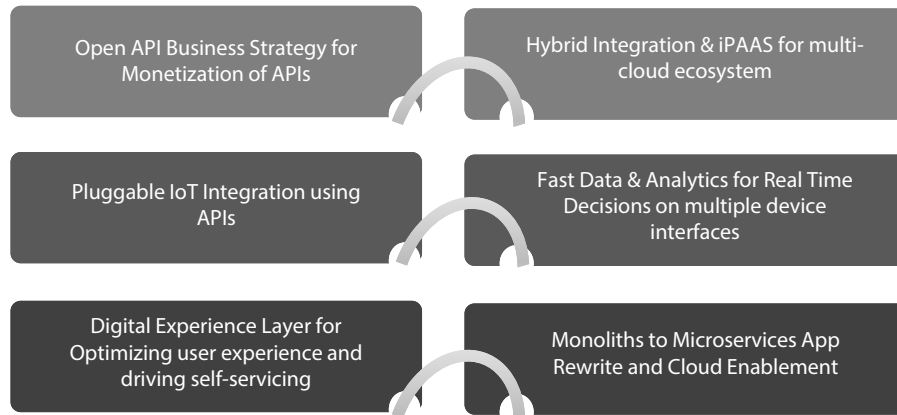


Figure 5: Our API Offerings

For a UK based global bank, Infosys performed an API product evaluation and API standardization. We helped in developing smart banking solutions and the bank was able to offer a unified banking experience across delivery channels. For an another UK based global bank, Infosys modernized core banking landscape from a predominantly P2P oriented multi-protocol architecture to an API based Integration Platform. 5000 P2P

interfaces were replaced by 450+ standard core banking system across 80 countries.

For a US based global banking firm, we implemented Layer 7, the topmost layer of the Open Systems Interconnect (OSI) Model. For a large American financial corporation, we set up an API management infrastructure and developed a platform to rapidly expose back-end services and data to external partners. For an another large

US bank, we set up and maintain an on-premises API Management Platform and defined operational processes for enabling ease of use of the API Platform. Currently, we are re-platforming ~200 API Services to an Open API Platform for one of the USA's largest financial services holding company. For a Swiss bank, we are providing strategy and architecture consulting to setup API road map, along with setup of APIGEE (Google's API Management Platform).





Conclusion

API-led digital transformation has a potential to overhaul the banking industry, as we've started witnessing it now. Backed with robust regulations, this will turn banks into agile and quickly-scalable platforms. The power-shift from large banks to digitally enabled second tier ones, Fintechs or non-traditional players can be really swift. It'll be changing the banking landscape with customers being the biggest winners. Banks must, therefore, embrace these changes to stay current and relevant.

About the authors



Varun Narang

Client Solution Manager, FS New Offerings Solutions

Varun has been with Infosys in pre-sales, consulting, and research roles for over 10 years now, and is currently a member of the New Offerings Presales team focused on providing overviews and recommendations to customers on Infosys's offerings around Digitization, AI and Automation, as well as plays a solution consulting role in RFXs in this space.



Manish Pandey

Client Solution Manager, FS-HIL New Offerings Solutions

Manish has been with Infosys in solution consulting, presales, and delivery roles for over 12.5 years now. He is currently part of the New Offerings Solutions team and helps clients to define their digital roadmap using emerging technologies including AI, ML, RPA and cloud technologies. In his delivery role, he worked on multiple successful business transformation programs across US and Europe leading to enhanced productivity and collaboration with measurable outcomes.

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For more information, contact askus@infosys.com



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