OPEN BANKING – A PERSPECTIVE

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Overview

There are several challenges facing the global banking industry today. Sluggish global economy, low credit offtake, increasing regulatory mandates, and a low interest rate regime have been denting the profits of banks. Further, new technologies such as blockchain, cloud computing, artificial Intelligence, machine learning, robotic process automation etc. have been raising customer expectations and reducing entry barriers for non-banking firms into the financial services businesses.

In this milieu, thanks to technology advancements, in recent times, proactive enterprises have been working towards exposing the functionality of their application landscape via set of well-defined Application Programming Interfaces (APIs). And why not?! After all, such a strategy helps an enterprise promote interoperability and reuse, bolster its co-existence within the ecosystem, and remain relevant in the current market conditions. A key implementation of API concept is 'Open Banking'. In the United Kingdom, Competition & Markets Authority (CMA) had come out with the 'Open Banking' project in 2016 - to generate innovation and competition in the current

account segment of small business entities and retail customers. CMA mandated that the 'Open Banking' Implementation Entity (OBIE) be formed within the United Kingdom to develop API standards to provide secure, regulated and safe access to bank accounts. This move impacted the nine largest banks in the United Kingdom in particular; and all other UK banks in general. The CMA has set out a package of remedies aimed at increasing innovation and improving competition.

The CMA directive around API enablement coincides with the European Union (EU) legislation of Payments Services Directive 2 (PSD2) – which requires financial institutions (FIs) to provide third parties access to their payments related data. These aforementioned developments have made 'Open Banking' imperative. Banks in concerned jurisdictions are required to provide the following to authorized third parties::

- **Standardized product and reference data**

- **With customer consent, secure access to specific current accounts** in order to read the transaction data and initiate payments

Today, a whole new ecosystem is developing whereby banks, FIs, financial technology companies (FinTechs), and start-ups are collaborating. This has set the stage for not only faster 'Open Banking' adoption, but also the promotion of other associated services being offered by the banks to become more competitive and relevant. Also, as technology is the enabler for 'Open Banking', many software developers have formed communities to develop new services. Banks are either creating in-house incubation centers or associating with FinTechs to crosspollinate, develop and enhance the product offerings to make them relevant to the current market conditions. Currently, immense possibilities are being generated through the components of 'Open Banking' - viz., APIs, transactional data and other associated technologies. 'Open Banking', however, also has associated risks related to data security, customer acceptance and market adoption. The success of 'Open Banking' will ultimately depend primarily on how effectively the ecosystem is developed, supported and enhanced to promote customer and market adoption.

API in Financial Services Industry

Application programming interfaces (APIs) have been a standard method of interconnecting system components for decades. However, over the past few years they have been discussed as 'a game changer' in the context of financial services. A number of factors have contributed to this sense of optimism – a key one being that APIs today usually refer to open APIs. Open APIs are publicly available services that allow anyone to connect to services. These technology-led innovations are enabling new client-centric business models, and which can allow banks to punch above their weight, while retaining the required agility and focus to respond quickly to the desired changes. 'Private API' and 'Open API' are two different types of API services. Key differences between the two are mentioned below:

Perspective	Open API	Private API
Target segment	Mostly external developers	In-house developers
Interface	Designed to be made available to all mobile- and web-developers over the internet	Designed to expose only a part of the overall functionality of the organization and to be made available to a target set of developers
Stimulates	An ecosystem of innovation; as external developers combine the APIs with their applications to create specialized applications and offerings	Extensive reuse as the developers can make use of the already created internal services rather than rebuilding the same functionality time and again
Enablement	Enables external developers to create new applications that are becoming popular	Enables internal developers to leverage existing systems
Security Risks	Exposes the organization to more risk from hackers as new APIs that had never been exposed earlier, become available	When software interfaces are exposed, new set of security challenges and concerns always crop up
Branding	The use and application of the 'Open APIs' is pretty much dependent on the ingenuity of the external application developers	Internal developers can create applications that are consistent with the aesthetic aspect of the user experience in line with the organizational standards

A major enabler for 'Open Banking' is establishing a suitable API Management

For this, banks need to:

- Draw their API strategy based upon their business priorities
- Approach strategically and deliver API deliverables at the enterprise level and not at the line of business or franchisee level
- Identify prospective API service providers, competitors, and all other participants in the ecosystem; along with an innovation ecosystem map
- Evaluate potential data assets and core processes and their value to the external API ecosystem
- Gauge their existing business and technology capabilities to develop, launch and operate API-based services
- Develop list of potential APIs with internal / external value proposition based on the bank's priorities, operational readiness and the commercial model

Open Bank API Architecture – Logical View

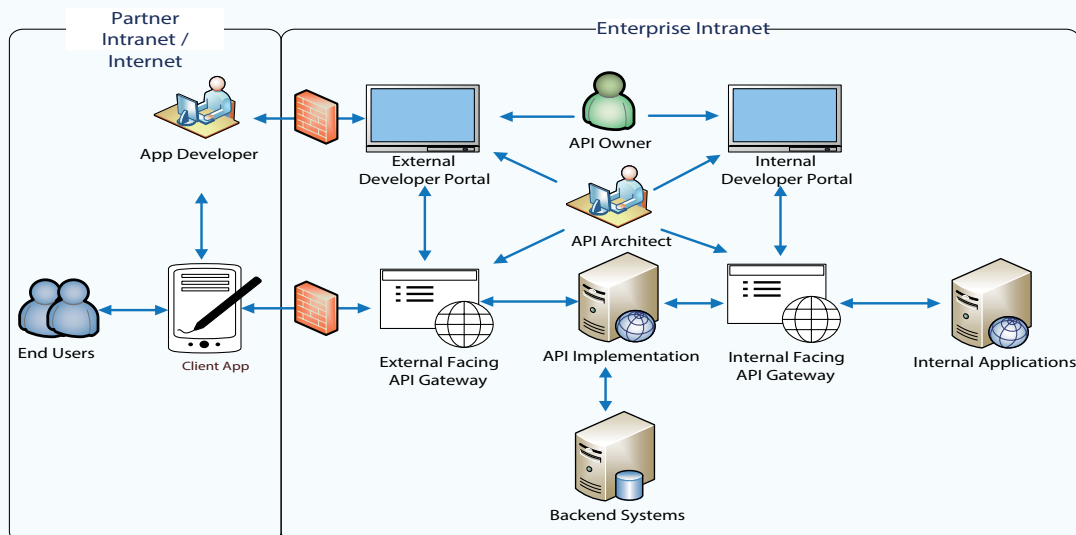Refer below a logical view of an open bank API architecture.

Exhibit 1 - Logical view of an open bank API architecture

Challenges in Implementing 'Open Banking'

While there are numerous benefits to be had from implementing 'Open Banking' (viz., through sharing of customers' financial and transactional data via 'Open APIs'), it can also be potentially risky and a big disruptor for the financial services market.

There are many challenges associated with 'Open Banking'. An effective mechanism to overcome these challenges will be key to the success of 'Open Banking' and its large scape adoption.

Category	Challenge
Security challenges	• Inherent vulnerabilities in the APIs that transfer data and communicate with back-end systems • Insecure data linkages and API endpoints • Fake Secure Sockets Layer (SSL) certificates • Weak validation protocols • Business logic flaws in API design
Risk and liability	• Data loss and customer privacy risks • Liability management with 3rd parties • Agreeing on a trust relationship with 3rd parties
Low standardisation	• Lack of standards across the layer in the industry – service definition, • authentication, authorization • Lack of clarity on API and data specifications
Operationalising API	• Slow pace of operationalisation • Duplication of work at several areas in the organization • API performance and scalability issues • Difficulties in seamless integration with existing application landscape
Testing	• Driving efficiency at-scale and designing security test scenarios
SME bandwidth	• SME & infrastructure bandwidth issues - given the regulatory change overload across banks

API Security Implications

Below are key security imperatives for banks while implementing APIs as part of 'Open Banking'.

Area	Implication
Authentication	• Consider the target developer audience (internal/external/partner) - each require different types of credentials • Authenticate service consumers and developers • Consider mobile application opportunities for authentication
Integration	• Use standard identity integration mechanisms wherever possible e.g. OAuth, Security Assertion Markup Language (SAML) • Integrate with an existing external access management/identity management solution • Consider the implications and constraints of separating customers and internal users
Threat Detection	• Detection of common threats, e.g. Distributed Denial of Service (DDoS), SQL injection,virus detection, Cross-Site Scripting (XSS), parameter attacks, authentication token theft etc. • Can be done at both the API Management layer or at the firewall
Design for Security	• Separate API security layer from API implementation • Leverage proven security policies • Use proven API management solutions • Access control should be based on business requirements and not on technology constraints
Data Security	• Expose enterprise data and functionalities in a secure API-friendly format • Protect information assets exposed via API from misuse (entitlements) • Turn on Secure Sockets Layer (SSL), and data encryption internally as well

Key Tenets of 'Open Banking'

There are tremendous benefits to be realized by API economy in general and 'Open Banking' in particular. The changes in customers' expectations, myriad regulatory mandates, and FinTechs innovations have been forcing concerned firms towards faster digital and 'Open Banking' adoption. Firms therefore need to take heed of and abide by the following key tenets of 'Open Banking'.

1) **Data sharing:** Data sharing in the financial services industry would lead to healthy competition amongst the market players. Consequently, this would lead to improved efficiency of FIs' services, transparency in pricing, and better-informed decision making. 'Open Banking' envisages allowing the consumers to securely and easily share their financial data with trusted parties such as banks, FinTechs, or potentially with technology giants such Facebook. However, vulnerability of security risks while sharing the data is a concern

that needs to be addressed. As part of implementation, standard procedure for mobilizing customer consent for sharing their personal and financial data needs to evolve based on the prevailing Secrecy or Privacy Acts in respective countries.

Though financial sector will broadly get impacted by data sharing under 'Open Banking', below are the three payment services that have key relevance:

a. *Services to compare product by using real-time customer transaction data and to provide estimate for the potential savings or any other benefits for switching to another product or service provider.*

b. *Services that aggregate the payments and financial ptosition data for customer. These services analyze the data in real time to identify trends and behavior pattern for better insights into the customer; thus providing firms the ability to better structure their products and offerings.*

c. *Services for affecting secure online payments without the need of*

authentication by customer time and again.

Data insights need to be strengthened by firms earnestly; being proactive in this regard will give firms access to market intelligence on customers and competition. If a firm remains reactive, the advantage would shift to its competitors.

While 'Open Banking' paves way for improved customer experience and convenience, it also triggers umerous opportunities for digital frauds and cybercrimes. Additionally, hitherto, client data was considered as highly confidential and Bankers' Privacy / Secrecy Acts have been in place. However, under 'Open Banking' regime data sharing becomes commercial. Firms therefore need to be equipped with suitable security measures to counter the cyber-attacks. They need to exercise sufficient caution and ensure audit trails are in place for every data transfer that occurs. Further, they need to focus on the massive task of educating their clients about the security of their data.

2) **Market competition:** Market competition is one of the driving force for 'Open Banking'. The data revolution coupled with the competition from FinTechs will have big commercial effects on banks. Having access to customers' data will not only help in removing the entry barrier for new players but also extend equal opportunity for competitors in offering better deals. Customers too would have opportunity to compare the services offered by various firms and their cost involved, and take effective decision. Firms should proactively work towards gaining edge over their competitors vis-à-vis 'Open Banking'.

3) **Regulatory compliance:** 'Open Banking', as a concept, evolved out of regulatory requirements of PSD2 in European Union and CMA directive in the UK – so as to give customers more choice and transparency; and to kickstart further innovation in the banking industry. It is true that, given a choice, many banks would not want 'Open Banking' to be adopted – as it increases competition for them. However, firms need to note that, with the passage of time, more and more countries would adopt regulations

supporting 'Open Banking'. Therefore, firms should think strategically and take a proactive approach towards 'Open Banking' implementation.

Open Banking – Global Adoption

'Open Banking' is gaining adoption across the globe. Refer below:

- **North America:** PSD2 is being observed closely. If PSD2 gains success, similar regulation may be implemented in North America. 'Open Banking' developer portals have been launched by several banks

- **Latin America:** There have been retail banking propositions to let customers access their accounts via social media

- **Europe:** Across Europe, leading mainstream banks & non-banks have been promoting aggregation propositions. Overall, across Europe, a fragmented and varied approach has been emerging towards 'Open Banking'; and key European geographies have been exhibiting quite diverse reactions to PSD2 United Kingdom, Ireland and Nordics are the most advanced markets in adoption of this regulation. In Nordics, non-FS clients (e.g. large retailers) are proactively pursuing opportunities that PSD2 creates.

On the other hand, many banks in southern European countries have been taking a wait-and-watch approach

- **Australia:** In Australia, government has already announced that it would introduce 'Open Banking'. The 4 major banks are working towards implementing 'Open Banking' in the areas of: a) consumer credit, debit cards, deposits, and transaction accounts in phase 1 by 1st July 2019, b) mortgages as part of phase 2 by 1st February 2020, and c) consumer data on all products covered in phase 3 by 1st July 2020. All other banks would implement 'Open Banking' within additional 12 months for each of the phase dates set for the 4 major banks

- **Asia:** Many 'Open Banking' related technology initiatives have been launched by government in China, India, and Singapore. These initiatives are linked to KYC and customer authentication. In Singapore, regulator has issued a "Finance-as-a-Service" playbook for boosting "Open API adoption" amongst FIs & FinTechs

- **Africa:** PSD2 is being observed closely. If PSD2 gains success, similar regulation may be implemented in South Africa. API banking use-cases for 'financial inclusion' is also gaining traction in Africa

Conclusion

Regulatory mandate coupled with the FinTech revolution has made 'Open Banking' imperative for banks in the United Kingdom. Many other countries are also actively watching the 'Open Banking' space. For e.g., regulatory authorities in Australia have been evaluating the possibilities of implementing 'Open Banking' in Australia. Initially, the cost of building APIs may seem prohibitive for banks. However, in the long term, the benefits for banks would be huge. Banks should therefore proactively evaluate their business lines that can be brought under the purview of 'Open Baking'. Regulatory guidelines in their respective country (if already available) would be the key starting point for banks in implementing 'Open Banking'. In United Kingdom, as of today, current accounts and payments are under regulatory purview of 'open banking' implementation. Retail lending, retail deposits, SME lending, credit cards, treasury, and Personal Financial Management (PFMs) could also be potential candidates for 'Open Banking' soon.

It is therefore advisable that banks identify process changes in each of these business areas and prepare themselves for the change. Banks that proactively embrace the tenets of 'Open Banking' and capitalize on the opportunities it offers would gain significant first-mover advantage.

About the Authors

Hariharasudan Parthasarathy
Principal Consultant, Banking & Retail Finance Practice, Infosys

Hariharasudan is a Banking Domain Expert in the areas of Commercial and Consumer Banking and has worked majorly on Core Banking Solutions. He has been engaged with Infosys for over 7 years.

He has close to 30 years of working experience across various banks and financial services industry. Over the years, he has worked in 2 different Core Banking Solutions. He can be contacted at Hariharasudan_P@infosys.com

Sastry Kutumba Burra
Principal Consultant, Global Regulations & Compliance Practice, Infosys

Sastry is a versatile domain expert and is a certified FRM. His experience spans across Core Banking and in Risk & Compliance areas for major banks in different regions across the globe. He has been engaged with Infosys for over 10 years. He can be contacted at Sastry_Burra@infosys.com

Gagnesh Kumar
Senior Principal Technology Architect, FSSTAR, Infosys

Gagnesh has been associated with Financial Services for the last 21 years. He has been performing the role of a Lead Architect for tier 1 banks across the globe and brings in wealth of experience in multiple technology areas. He has extensive experience in FS across functional areas like Equities Trading, Mortgage, Financial Planning, Risk and Compliance, Payments, Insurance, and Wealth Management.

He can be contacted at Gagnesh_Kumar@infosys.com

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