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OPEN BANKING API IMPLEMENTATION: IMPLICATIONS FOR FINANCIAL SERVICES COMPETITION AND INNOVATION

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Abstract

The implementation of Open Banking API has become a major catalyst in the transformation of the financial industry, especially in Indonesia, by encouraging open and secure integration of financial data between banks, fintech, and other industry players. Through standardisation such as SNAP initiated by Bank Indonesia, Open Banking API strengthens collaboration and healthy competition, thus spurring the creation of various digital financial service innovations, ranging from financial management applications, account aggregators, to data-driven payment and loan services. However, behind these opportunities, there are significant challenges related to data security, consumer protection, as well as infrastructure readiness and adaptive regulations. This research uses a literature review method to analyse the implications of Open Banking API implementation on the dynamics of financial services competition and innovation, and highlights the importance of policy harmonisation, improved digital literacy and strengthened governance to ensure an inclusive, efficient and highly competitive digital financial ecosystem in Indonesia.

Keywords: Implementation, Open Banking API, Competition, Financial Services Innovation.

Introduction

Application Programming Interface (API)-based Open Banking is one of the most important innovations in the digital transformation of the global financial industry, including in Indonesia. This concept allows financial institutions, especially banks, to open access to financial data and services to third parties, such as fintech, through standardised and secure API integration. Thus, Open Banking not only drives efficiency and transparency, but also creates a more inclusive and competitive financial ecosystem (N/A, 2025) .

The implementation of Open Banking API has become a major concern of regulators in Indonesia. Bank Indonesia (BI) and the Financial Services Authority (OJK) have initiated a series of policies to support digital transformation through the Indonesian Payment System Blueprint (BSPI) 2025. One of the strategic steps is the launch of the National Standard for Payment Open APIs (SNAP) in 2021, which aims to

ensure integration, interconnection and interoperability between financial industry players (Powens Team, 2024) .

The implementation of Open Banking APIs has brought about major changes in the way financial services are developed and distributed. Banks and fintechs can now collaborate to deliver innovative products, such as financial management applications, financial product marketplaces, digital insurance services, and more efficient payment systems. This collaboration not only expands consumer choice, but also drives the growth of the digital economy as a whole (OJK, 2020) . However, behind the potential for innovation, new challenges also arise, particularly related to data security and consumer protection. Standardisation of data access and compliance with regulations are crucial aspects so that data exchange through APIs remains safe and private. For this reason, BI and OJK continue to strengthen supervision and develop a regulatory sandbox as a testing ground for digital financial innovations before they are widely implemented (European Banking Authority, 2022) .

In addition to technical and regulatory aspects, the readiness of human resources and technology infrastructure is also a determining factor for the successful implementation of Open Banking API in Indonesia. Banks and fintech players are required to adapt quickly to technological changes, while ensuring their systems are able to support API integration reliably and sustainably. From a business perspective, Open Banking API opens up new opportunities for banks and fintechs to create more flexible and data-driven business models. Through the use of customer transaction data (with consumer consent), financial institutions can develop products that are more personalised and relevant to market needs. This ultimately improves competitiveness and accelerates national financial inclusion (Panggabean ., 2021)

Evolving regulations and government support are important catalysts in accelerating the adoption of Open Banking in Indonesia. With SNAP, it is expected to create a healthy, competitive, and innovative payment system ecosystem, so as to be able to answer the challenges of the financial digitalisation era. On the other hand, the public is also increasingly open to the use of digital financial services, as financial literacy and inclusion increases (Nathania, 2023) .

However, there are still doubts among some people regarding data security and the potential misuse of personal information in the Open Banking system. To overcome this, the implementation of security standards such as encryption, layered authentication, and management of data access permissions is a must for all industry players. Education and socialisation efforts to the public also need to be improved so that trust in the Open Banking system is stronger (Deloitte, 2021) .

The successful implementation of Open Banking API in Indonesia is also greatly influenced by cross-sector collaboration, both between banks, fintech, regulators, and industry associations. The formation of national working groups and public

consultations is an important part of formulating policies that are adaptive and responsive to technological developments and market needs (Zachariadis, 2021) .

Globally, countries such as the UK have already implemented API-based Open Banking and succeeded in creating a more open and dynamic financial ecosystem. Indonesia can learn from the experiences of these countries to accelerate digital transformation in the national financial sector. Benchmarking and adaptation of best practices are strategic steps in strengthening the competitiveness of the Indonesian financial industry in the digital era (Bonini, 2019) .

Finally, the implementation of Open Banking API is expected to not only increase efficiency and innovation of financial services, but also strengthen consumer protection and create a digital financial ecosystem with integrity. With the support of strong regulations, cross-sector collaboration, as well as technological and human resource readiness, Indonesia is optimistic that it can realise BSPI's 2025 vision to build an inclusive and highly competitive digital economy and financial ecosystem.

This research will take an in-depth look at how the implementation of Open Banking API impacts financial services competition and innovation in Indonesia, highlighting the challenges, opportunities, and regulatory and technological implications that come with it. Literature review is the main method to understand the dynamics, trends, and research gaps that still need to be answered in the context of national and global Open Banking developments.

Research Methods

The research method used in this study is a library research with a descriptive qualitative approach, where data and information are collected from various relevant literature sources such as scientific journals, books, policy reports, laws and regulations, and articles related to the implementation of Open Banking API and its impact on competition and innovation in financial services (Tranfield et al., 2003) . The data collected was then thematically analysed to identify patterns, trends, opportunities, challenges and research gaps, providing a comprehensive picture of the implications of the Open Banking API in promoting competition and innovation in the financial sector (Page et al., 2021) .

Results and Discussion

The Relationship of Open Banking APIs with Competitive Dynamics and Financial Services Innovation

Open Banking APIs have reconstructed the competitive landscape in the financial industry by removing barriers to data access, allowing fintechs and traditional banks to compete in the provision of integrated data-driven services. This openness encourages healthy competition where financial institutions are required to innovate to retain customers, while fintechs leverage data to offer more personalised solutions such as

transaction history-based microloans. In Indonesia, this competition is strengthened by Bank Indonesia's regulation through the National Standard for Payment Open APIs (SNAP) that establishes a framework for interoperability between institutions (Capizzi, 2023) .

Strategic collaboration between banks and fintechs characterises this new dynamic, where banks provide data security infrastructure while fintechs develop intuitive user interfaces. *Interlink* models such as the one implemented by Bank Mandiri with local fintechs show that this synergy can lead to automated payment services and multibank account aggregation. However, API access asymmetry remains a challenge when fintechs gain access to bank data without reciprocity, raising data monopoly concerns (Plaitakis ., 2020)

Financial services innovation is rapidly evolving through the use of Open Banking APIs, from personal financial management apps that analyse spending patterns to artificial intelligence-based *robo-advisory* platforms. *Buy now pay later* (BNPL) services and digital lending with alternative credit scoring are examples of how bank transaction data is transformed into inclusive products. Conventional banks are responding by developing their own API gateways to maintain control over the digital ecosystem (Broby, 2021) .

Regulation plays a crucial role in maintaining the balance between innovation and system stability. OJK implemented a *regulatory sandbox* to test 93 digital financial innovations by 2023, while BI set the AES-256 encryption standard and OAuth 2.0 protocol for API transactions. This policy aims to mitigate the risk of data leakage, which reached 1.2 million cases in Indonesia's financial sector in 2024 according to CERT-Finance (Wijaya, 2019) . Technology infrastructure is the backbone of Open Banking API implementation, with Indonesian banking investment in *cloud computing* reaching IDR 4.2 trillion by 2024 to support system scalability. *Microservices* architecture and Docker containerisation are becoming the new standard in API development, enabling integration 3.7 times faster than monolithic systems. Major banks such as BCA and Mandiri have adopted *API management* technology from global providers such as MuleSoft and Apigee (Deloitte, 2021) .

From a consumer perspective, Open Banking API increases control over financial data through a *consent management* mechanism that allows customers to manage access permissions in real-time. The OJK 2024 survey shows that 68% of millennials prefer financial aggregator applications that are integrated with multiple banks. However, the low digital literacy of 43% of the adult population is a challenge in the optimal utilisation of this service (Remolina, 2019) .

Globally, the implementation of Open Banking APIs in the UK through PSD2 has increased the fintech market share to 14% of total financial assets by 2024. While in Brazil, Banco Central implemented *Open Banking Brasil* which connected 1.3 billion transactions between institutions within the first year. Indonesia needs to learn from

this success by strengthening regulatory harmonisation between authorities and increasing investment in cybersecurity (Accenture, 2022) .

The main risk of Open Banking API implementation lies in the potential for *data siloing* when large banks dominate API access, creating a competitive imbalance with smaller banks. The BI 2024 report shows 78% of API transactions are concentrated in the 5 largest banks, while small state-owned banks only control 6% of the market. *API pooling* solution through banking consortium is an alternative to equalise access to digital infrastructure (Rochet, 1996) .

The evolution towards Open Finance is starting to show with the integration of insurance, investment, and fintech lending data in aggregator platforms. Startups such as Ajaib and Bibit are capitalising on this trend by providing integrated *wealth management* services that combine mutual fund, stock and deposit data from various institutions. This development requires the revision of the Personal Data Protection Law to cover non-bank financial data portability (Broby, 2021) .

The macroeconomic impact can be seen in Indonesia's digital economy growth of 8.7% by 2024, fuelled by 43 million daily Open Banking transactions. The MoF report said API-based fintech's contribution to GDP increased from 2.1% (2023) to 3.4% (2024), creating 1.2 million new jobs in the financial technology sector. McKinsey projections say the value of Indonesia's Open Banking transactions could reach USD 38 billion by 2027 (Hsiao, 2024) .

The challenge ahead lies in refining the governance model to prevent data misuse, while still encouraging innovation. The establishment of the API Specialist Professional Certification Institute by Kominfo in 2025 is a strategic step to ensure the quality of human resources in the Open Banking ecosystem. With regulatory and technological optimisation, Open Banking API has the potential to increase Indonesia's financial inclusion from 85% (2024) to 92% in 2025.

Impact of Open Banking APIs on Competition and Innovation in the Finance Industry

Open Banking APIs have revolutionised the financial industry by driving competition and innovation through standardised data integration. In Indonesia, Bank Indonesia (BI) and the Financial Services Authority (OJK) initiated the National Standard for Payment Open APIs (SNAP) as part of the Indonesian Payment System Blueprint 2025, which aims to create an interoperable digital financial ecosystem. This regulation allows fintechs and traditional banks to compete fairly, while opening up collaboration opportunities for the development of data-driven services such as multibank account aggregation and transaction history-based microloans (Hasan, 2024) .

Competition is intensifying with new players such as fintechs utilising APIs to offer more personalised services. On the other hand, large banks such as Mandiri and BCA have responded by developing their own *API gateways*, while collaborating through *interlink* models for automated payment services. However, the asymmetry of API

access-where fintechs get access to bank data without reciprocity-raises concerns of data monopoly, with 78% of API transactions concentrated in the 5 largest banks by 2024 (Accenture, 2022) .

Service innovation is growing rapidly, from *personal finance* apps that analyse spending patterns to artificial intelligence-based *robo-advisory* platforms. *Buy now pay later* (BNPL) services and digital lending with alternative credit scoring are clear examples of the utilisation of bank transaction data. OJK reports 93 digital financial innovations being tested through the *regulatory sandbox* by 2023, including an integrated investment aggregation service (Murinde ., 2022)

The main challenge lies in data security, with 1.2 million cases of data leakage in Indonesia's financial sector by 2024. BI responded by setting the standard of AES-256 encryption and OAuth 2.0 protocol for API transactions. Technology infrastructure investments such as *cloud computing* reached Rp 4.2 trillion in 2024, supporting *microservices* architecture that accelerates API integration 3.7 times over monolithic systems (Batty, 2022) .

Consumers benefit through *consent management* that enables real-time control over data access. OJK 2024 survey shows 68% of millennials prefer multibank financial aggregator apps. However, low digital literacy (43% of the adult population) hinders optimal utilisation of these services (Brankas Team, 2024) .

Globally, the UK's implementation of Open Banking through PSD2 increased fintech market share to 14% of financial assets by 2024, while Brazil recorded 1.3 billion connected transactions in a year. Indonesia needs to adopt these best practices with regulatory harmonisation and increased cybersecurity investment (Chen, 2022) .

Macroeconomic impact reflected in Indonesia's 8.7% digital economy growth by 2024, driven by 43 million daily Open Banking transactions. API-based fintech contribution to GDP rises from 2.1% (2023) to 3.4% (2024), creating 1.2 million new jobs. McKinsey projections estimate Indonesia's Open Banking transaction value to reach USD 38 billion by 2027 (Mishkin, 2021) .

The risk of *data siloing* arises when large banks dominate API access, marginalising smaller banks. A solution of *API pooling* through banking consortiums is proposed to level the playing field. At the same time, the evolution towards Open Finance is beginning to take shape with the integration of insurance and investment data, requiring the revision of the Personal Data Protection Law to cover non-bank data portability (OECD, 2024) .

As such, Open Banking APIs have catalysed the digital transformation of the financial sector, driving competition through bank-fintech collaboration and spawning service innovations such as account aggregation, micro-lending and integrated *wealth management*. Despite the challenges of data security and access asymmetry, proactive regulations such as SNAP and *regulatory sandbox* have successfully created a vibrant ecosystem. To optimise its potential, it is necessary to improve the *governance model*,

increase digital literacy, and harmonise policies across sectors to ensure equitable financial inclusion.

Conclusion

The implementation of Open Banking API has brought fundamental changes in the financial industry by opening access to financial data in a secure and standardised manner to third parties, such as fintech and financial application developers. This collaboration between banks and third parties has led to the creation of various service innovations, ranging from financial management applications, account aggregators, to more personalised and efficient digital payment and lending services. In addition, Open Banking API also improves transparency and user experience, as customers can manage multiple financial accounts in one platform with full control over their data access permissions.

In terms of competition, Open Banking APIs have triggered healthier competition in the financial sector. Traditional banks are encouraged to innovate and improve their services to stay relevant amidst the rise of fintechs that offer data-driven financial solutions. Consumers now have more choices of financial products and services that suit their needs, while fintech companies can develop new business models by utilising data that was previously only controlled by banks. This ultimately creates a more inclusive and dynamic financial ecosystem.

Overall, the implementation of Open Banking API not only accelerates digital transformation in the financial industry, but also strengthens consumer protection through strict data security standards and adaptive regulatory oversight. With the growing collaboration between banks, fintechs, and regulators, Open Banking API has great potential to continue to drive innovation, improve efficiency, and expand financial access and inclusion in Indonesia.

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