

Technology: A Driver of Islamic Banking Growth in Indonesia — The Case of Bank Syariah Indonesia (BSI)

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Summary:

This paper explores how technological innovation is driving the expansion and modernization of Islamic banking in Indonesia, with a particular focus on Bank Syariah Indonesia (BSI). The rapid advancement of mobile banking applications, digital payments, and super apps has transformed consumer behavior and expectations. BSI's strategic investment in digital infrastructure has enabled it to enhance customer experience, improve operational efficiency, and expand financial inclusion, especially among younger demographics. Through a case study approach, this research demonstrates that technology is not only an enabler of service delivery but also a means of reinforcing Shariah-compliant values and fostering trust within the Muslim community. The findings contribute to a deeper understanding of how Islamic banks can leverage digital tools to achieve sustainable growth in emerging markets.

Keywords: banking ; Islamic banking ; digital ; mobile banking.

Jel Classification Codes : L25, M31, L86, L2.

Résumé :

Cet article explore comment l'innovation technologique stimule l'expansion et la modernisation de la banque islamique en Indonésie, avec un accent particulier sur Bank Syariah Indonesia (BSI). L'évolution rapide des applications de banque mobile, des paiements numériques et des super applications a transformé le comportement et les attentes des consommateurs. L'investissement stratégique de BSI dans l'infrastructure numérique lui a permis d'améliorer l'expérience client, d'accroître l'efficacité opérationnelle et d'élargir l'inclusion financière, en particulier auprès des jeunes démographies. À travers une approche d'étude de cas, cette recherche démontre que la technologie n'est pas seulement un facilitateur de la prestation de services, mais aussi un moyen de renforcer les valeurs conformes à la charia et de favoriser la confiance au sein de la communauté musulmane. Ces résultats contribuent à une compréhension plus approfondie de la manière dont les banques islamiques peuvent exploiter les outils numériques pour atteindre une croissance durable sur les marchés émergents.

Mots-clés : banque ; Banque islamique ; numérique ; Banque mobile.

Codes de classification du Jel : L25, M31, L86, L2.

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I- Introduction :

In recent years, technology has emerged as a primary catalyst for growth across the global banking industry. In Indonesia, where Islamic banking continues to develop within the national financial landscape, digital transformation has become a key strategic lever for both expansion and differentiation. Bank Syariah Indonesia (BSI), formed through the 2021 merger of three state-owned Islamic banks, provides a compelling case study of how advanced technologies are driving this transformation.

In 2023–2024, BSI Mobile users grew from 5.9 million to 7.12 million (+34%), and mobile transaction volume rose by +45% year-on-year. The share of digital transactions now exceeds 97.9% of total banking activity, and 94.4% of accounts are now opened online.

Through services like Zakat and Waqf payments, Hajj savings, and QRIS-based payments in mosques (+212% growth), BSI integrates Islamic values with modern financial tools. The bank's success reflects how technology enhances financial inclusion, customer engagement, and ethical finance — positioning BSI as a leader in Islamic digital banking.

With Indonesia's large, youthful, and increasingly tech-savvy population—combined with one of the fastest-growing smartphone markets in the world—there is a rising demand for Shariah-compliant financial services that are accessible anytime and anywhere. Through innovations such as the BSI Mobile platform, QRIS-based payments, and integrated super apps, BSI has successfully positioned itself as a modern Islamic financial institution that aligns ethical finance with digital convenience.

This study aims to examine the role of technology as a key driver in the growth of Islamic banking in Indonesia, focusing on the experience and performance of BSI. It will explore how digital innovation contributes to customer acquisition, retention, financial inclusion, and the reinforcement of Islamic principles in financial service delivery.

II Literature Review:

II -1-Academic-Style Definition of Electronic Islamic Banking

Electronic Islamic Banking is the process of delivering Shariah-compliant banking services through electronic and digital channels, including internet banking, mobile applications, automated teller machines (ATMs), electronic payment gateways, and integrated fintech platforms (Abdullah, 2021, pp. 2-8). These services are governed by Islamic principles that prohibit interest (riba), speculative transactions (gharar), and investments in unethical industries, while promoting fairness, risk-sharing, and asset-backed financing.

The objective of electronic Islamic banking is to enhance financial accessibility, improve operational efficiency, and expand financial inclusion, especially in underserved Muslim communities, by leveraging digital technologies while ensuring full compliance with Shariah rules and standards.

II - 2The reasons and motives for adopting Islamic electronic banking

A. Growing Demand for Ethical and Convenient Financial Services

Today's consumers, especially younger and tech-savvy generations, seek financial services that are both convenient and aligned with their religious values. Electronic Islamic banking meets this need by providing round-the-clock access to Shariah-compliant services through mobile and online platforms.

B. Advancements in Financial Technology (Fintech)

Innovations in fintech, artificial intelligence, blockchain, and data analytics have enabled Islamic banks to offer more personalized, efficient, and secure digital services. These technologies enhance customer experience while maintaining high standards of compliance and transparency.

C. Supportive Regulatory Frameworks

Governments and financial regulators in many countries are actively promoting the digitalization of Islamic finance. Through supportive legislation, regulatory sandboxes, and innovation hubs, they are fostering an environment conducive to the growth of electronic Islamic banking.

D. Expanding Financial Inclusion

Electronic banking solutions are instrumental in reaching underbanked populations, particularly in remote and rural areas. By reducing dependence on physical branches, Islamic banks can deliver essential financial services to a broader segment of society.

E. Shariah Compliance Through Digital Innovation

Modern digital tools facilitate greater Shariah compliance by enabling automated contract management, integrated fatwa approval systems, and real-time monitoring. This ensures that all digital financial products adhere strictly to Islamic legal and ethical principles.

In the Previous studies (Abdullah et al., 2021; Haron et al., 2022) have shown that the adoption of financial technologies (fintech) in Islamic banking contributes to higher levels of customer satisfaction and loyalty, particularly when platforms successfully integrate religious values with user-friendly digital experiences. Research by PwC (2023) emphasizes that mobile-first strategies are critical in Southeast Asia, where over 75% of digital financial interactions occur via smartphones.

Furthermore, Islamic banks face the unique challenge of ensuring that technological innovations align with Shariah principles. According to Rosly (2020), digital platforms that incorporate features such as zakat calculators, halal investment tools, and Shariah advisory services can strengthen trust and deepen engagement with Muslim consumers.

II -3 - Islamic Fintech: A Catalyst for Transforming Islamic Banking:

The Role of Fintech to gain a comprehensive understanding of the Islamic fintech sector, it is crucial to examine the diverse factors that influence this evolving industry. Below are key perspectives that outline the pivotal elements of Islamic fintech:

1. Shariah Compliance: One of the core tenets of Islamic finance is strict adherence to Shariah law. Islamic fintech platforms are designed to ensure that their services and products are in full compliance with these ethical guidelines, providing financial solutions that meet the spiritual and moral needs of Muslim consumers. For example, in crowdfunding, platforms such as *Wahed Invest* vet potential projects for Shariah compliance, guaranteeing that Muslim investors can confidently engage without compromising their religious principles.

2. Financial Inclusion Islamic:

fintech plays a critical role in improving financial inclusion, particularly among the unbanked Muslim populations worldwide. By utilizing advanced technologies, Islamic fintech solutions make financial services more accessible and affordable for underserved communities, enabling their participation in the global economy. For instance, digital wallets like *Alipay* and *Ooredoo Money* have expanded across Muslim-majority regions, allowing individuals in remote areas to access basic financial services such as payments, transfers, and savings, regardless of their geographical location. According to the World Bank (2023), over 1.7 billion people globally remain unbanked, with Islamic fintech offering a pathway to financial inclusion for these populations.

3. Product Innovation: Islamic fintech has been a driving force behind the creation of innovative financial products that comply with Shariah law. These products cater to the specific needs of Muslim consumers, including halal investments, Shariah-compliant insurance (Takaful), and digital banking services. For example, robo-advisory platforms like *Wahed Invest* provide automated, Shariah-compliant investment advice, making it easier and more cost-effective for Muslim individuals to manage their wealth in accordance with Islamic principles. The growth of such platforms has accelerated due to increased demand for Shariah-compliant financial services, particularly among younger Muslim investors.

4. Regulatory Challenges: As Islamic fintech grows at a rapid pace, it has encountered significant regulatory challenges that require careful navigation. Regulators must find a way to balance innovation with the need for consumer protection and the stability of financial systems. In response, several countries have adopted regulatory sandboxes, allowing fintech startups to test their products and services within a controlled environment. For example, the Dubai Financial Services Authority (DFSA) has implemented an Islamic fintech sandbox that enables fintech innovators to develop and pilot Shariah-compliant financial products while ensuring regulatory compliance. This approach has helped foster the growth of Islamic fintech while maintaining strict adherence to financial regulations and Shariah principles.

5. Collaboration and Strategic Partnerships: Collaboration between traditional Islamic financial institutions and fintech startups has been a vital factor in the success of the Islamic fintech industry. By combining the strengths of established banks with the innovative capabilities of fintech companies, both sectors can deliver more comprehensive and user-friendly Shariah-compliant financial solutions.

Successful partnerships, such as those between Bank Islam Malaysia and Finexus have led to the creation of digital banking platforms that offer seamless, digital-first Islamic banking experiences. These collaborations not only broaden the range of services available to Muslim consumers but also drive financial inclusion across the globe.

II -4 – The Emergence of Fintech in the Islamic Finance Sector

The rapid rise of financial technology (fintech) has induced profound changes across various economic sectors, including the Islamic finance industry. Fintech has fundamentally transformed the delivery of financial services, enhancing their accessibility, efficiency, and user-friendliness. Within the context of Islamic finance, which operates under Shariah principles, fintech has opened doors to new innovations and opportunities for growth. This section examines the rise of fintech within Islamic finance and its impact on different facets of the sector.

a. Boosting Financial Inclusion

One of the most significant contributions of fintech to the Islamic finance sector is its ability to foster financial inclusion. Fintech platforms have made it simpler for underserved populations, particularly those in rural or remote areas, to access Islamic financial services. Mobile banking, for example, enables individuals to open Shariah-compliant accounts and conduct transactions without needing to visit a physical bank branch. According to the World Bank (2023), fintech has allowed over 1.7 billion unbanked individuals to access formal financial services globally, with a substantial number of these individuals benefiting from Islamic fintech solutions. This digital transition has empowered previously excluded groups to actively participate in Islamic banking.

b. Streamlining Operations and Improving Efficiency

Another crucial role fintech plays in Islamic finance is streamlining financial processes and boosting operational efficiency. Automation and digitization have significantly cut down the time and costs associated with traditional financial tasks such as account opening, funds transfer, and investment management. For instance, robo-advisory platforms that provide automated investment advice based on Shariah-compliant criteria have reduced the need for in-person consultations with financial advisors. This has not only saved considerable time but also lowered operational costs for Islamic financial institutions. According to a report by *McKinsey & Company* (2023), fintech solutions have led to a 20% reduction in operational costs for banks that have fully digitized their services.

c. Shariah-Compliant Fintech Solutions

Fintech has played an essential role in developing Shariah-compliant financial products and services. These solutions ensure that financial transactions and offerings adhere to Islamic legal principles, which prohibit interest (riba) and promote profit-sharing and risk-sharing mechanisms. For example, Islamic crowdfunding platforms, such as *Kickstarter Islamic* and *Crowd for Good*, allow users to invest in halal businesses or charitable projects while ensuring that the platforms themselves comply with Shariah guidelines. These platforms provide transparency, enabling investors to track the use of their funds, ensuring their investments align with ethical Islamic standards. As of 2024, Shariah-compliant crowdfunding platforms have raised over \$1 billion in funds, showcasing the growing acceptance and demand for such solutions in the Islamic finance market.

d. Challenges and Regulatory Considerations

While the advent of fintech in the Islamic finance sector offers numerous opportunities, it also presents several challenges that require careful regulatory oversight. One primary concern is ensuring that fintech platforms comply with Shariah principles in their operations. Islamic financial institutions must ensure that the technologies and algorithms behind these platforms align with Islamic law. Additionally, appropriate regulatory frameworks must be developed to govern fintech operations within Islamic finance, safeguarding consumer protection and maintaining the integrity of the financial system. In response, countries such as Malaysia and the UAE have implemented Islamic fintech regulatory sandboxes that allow companies to test their products while ensuring compliance with both financial and Shariah regulations.

e. Collaboration Between Fintech Startups and Traditional Institutions

To maximize the potential of fintech in the Islamic finance industry, collaboration between fintech startups and traditional Islamic financial institutions is essential. Established institutions can leverage the innovative capabilities of fintech startups to enhance their product offerings and operational processes. At the same time, fintech startups can benefit from the expertise and extensive customer base of traditional financial institutions. Examples of such collaborations include partnerships between *Al Rajhi Bank* and fintech firms that have resulted in innovative digital banking services tailored to the specific needs of Muslim consumers. These collaborations have led to the creation of digital Islamic banking platforms that offer seamless, Shariah-compliant financial services. According to a recent report by Deloitte (2024), over 40% of Islamic banks globally are now engaged in partnerships with fintech startups, aiming to improve customer experience and service offerings.

The emergence of fintech within the Islamic finance sector has catalyzed transformative changes, driving financial inclusion, enhancing operational efficiency, and introducing innovative Shariah-compliant solutions. However, it remains vital for regulatory frameworks to adapt and for fintech startups and traditional institutions to collaborate effectively in order to fully harness fintech's potential. As the Islamic finance industry continues to evolve, fintech is set to revolutionize Islamic banking, making it more accessible, efficient, and customer-oriented.

V- The Case of Bank Syariah Indonesia (BSI)

In Indonesia, studies by Bank Indonesia (2024) indicate that Islamic banks that invest in digital transformation achieve faster growth in market share and profitability compared to their conventional counterparts. This underscores the importance of technology as both a competitive differentiator and a growth enabler in the Islamic banking sector (Bank, 2024, pp. 10-15).

Table1 : BSI Mobile Banking Statistics In Indonesia (2020 -2024)

Year	Active Mobile Users (millions)	Mobile Transactions (millions)	Transaction Value (IDR trillion)	Share of Digital Transactions (%)
2020	2.1	90	100	65
2021	3.5	150	180	78

2022	4.8	210	250	88
2023	5.9	266.29	338.22	94
2024	7.12	248	298.5	97.9

Sources: BSI Quarterly Reports (2020–2024), Bank Indonesia (2024), Euromoney (2024).

The statistical trends for the period 2020–2024 highlight the transformative role of digital technology in driving the expansion of Islamic banking services at Bank Syariah Indonesia (BSI).

Firstly, active BSI Mobile users rose sharply from approximately 2.1 million in 2020 to 7.12 million in 2024, reflecting the success of digital onboarding strategies, the bank’s appeal among younger demographics, and broader improvements in digital financial literacy across Indonesia. This growth also signals increasing trust in Shariah-compliant digital financial services.

Secondly, the mobile transaction volume increased from 90 million (2020) to 266.29 million (2023), indicating that mobile banking has become the preferred channel for everyday transactions. The slight adjustment in volume during mid-2024 likely reflects both seasonal patterns and optimization of transaction processing, as more users perform larger transactions through mobile channels.

Thirdly, transaction value grew from IDR 100 trillion (2020) to over IDR 338.22 trillion (2023), outpacing user growth. This suggests that not only are more users transacting digitally, but they are also conducting higher-value transactions — an indicator of growing confidence in the platform’s security and functionality.

Meanwhile, the share of digital transactions rose from around 65% in 2020 to nearly 97.9% in 2024. This illustrates a near-complete digital transformation within BSI’s operations. By reducing dependence on traditional branch banking, BSI has enhanced its operational efficiency and can now allocate greater resources toward innovation and customer experience.

Overall, this growth underscores several key economic impacts:

- Financial Inclusion: More Indonesians, particularly in rural areas and underserved communities, now access Islamic financial services (Haron & al, 2022) through digital means.
- Cost Efficiency: Increased digital adoption reduces overheads related to branch maintenance and manual processing.
- Market Competitiveness: BSI’s leadership in Islamic digital banking strengthens its position against conventional banks and emerging fintech players.
- Pandemic Resilience: The surge in digital transactions during 2020–2022 highlights how technology helped maintain banking services through COVID-19 disruptions — driving long-term behavioral shifts toward mobile-first banking.

As BSI continues to invest in advanced technologies such as AI, blockchain, and open banking APIs, it is well-positioned to lead the evolution of Islamic finance — both within Indonesia and in the broader Southeast Asian region (PWC, 2023).

II- Results and discussion :

The case of BSI illustrates that digital transformation is not merely a tool for operational efficiency; it also plays a crucial role in enhancing brand perception, fostering customer loyalty, and expanding the reach of Islamic banking services. By aligning technological innovation with Shariah-compliant principles, BSI is able to attract a younger, digitally literate audience that values both convenience and ethical financial practices.

Furthermore, BSI's growth demonstrates how Islamic banks can leverage digital platforms to bridge gaps in financial inclusion, particularly in rural and underserved communities. The ability to open accounts online, access financing tools, and perform zakat and waqf contributions through mobile applications reflects a new era of Islamic banking where technology serves both commercial and religious objectives.

The success of BSI also offers valuable insights for other Islamic financial institutions across Southeast Asia. Continuous investment in user experience (UX), cybersecurity, and Shariah-compliant fintech partnerships will be critical for maintaining competitive advantage and meeting evolving customer expectations **(.S.A, 2020)**.

In addition , In September 2023, BRI^{mo}—Bank Rakyat Indonesia's mobile banking application—recorded the highest number of users among state-owned banks, reaching 29.8 million users with a transaction volume of 2.18 billion, valued at approximately IDR 2,984 trillion. In comparison, Livin' by Mandiri experienced a user growth rate of 55%, totaling 21 million users and facilitating 2.02 billion transactions worth IDR 2,400 trillion.

BNI Mobile, operated by Bank Negara Indonesia, reported a 20.9% increase in users, reaching 15.6 million, with 738 million transactions valued at IDR 874 trillion. Meanwhile, BTN Mobile recorded a remarkable 78% year-on-year increase in users by mid-2023, although its total user base remained relatively modest at 593,000, with a transaction volume of IDR 2 trillion. BSI Mobile—the digital platform of Bank Syariah Indonesia—achieved a user growth rate of 32.8%, reaching 5.90 million users by September 2023. During the same period, BSI Mobile processed 266.29 million transactions with a total value of IDR 338.22 trillion.

These trends reflect the growing role of mobile banking and digital super apps in Indonesia's financial ecosystem. Platforms such as BRI^{mo} and Livin' by Mandiri have increasingly positioned themselves not merely as mobile banking tools, but as integrated digital wallets and financial management hubs. Meanwhile, BSI Mobile is consolidating its position as a Shariah-compliant super app, appealing to Muslim users seeking ethical and religiously guided financial services.

On the other hand, we find that The availability of a robust mobile platform has significantly changed how Indonesian consumers interact with Islamic banks:

.1 Increased Financial Inclusion

BSI Mobile has extended services to rural and remote regions where physical branches are limited.

.2 Younger Demographic Engagement

The platform is popular among millennial and Gen Z consumers who demand modern, mobile-first experiences.

.3 Religious Alignment

Features such as ZISWAF (Zakat, Infaq, Sadaqah, and Waqf) and Hajj Savings foster greater engagement by helping users integrate faith with finance.

.4 Growth in Non-Cash Payments

BSI saw over 14.13 million QRIS-based digital payments in mosques and religious institutions (+212% YoY).

.5 Market Recognition

BSI was named “Best Digital Bank” at the Euromoney 2024 Awards for Excellence, highlighting its leadership in digital Islamic banking (Board, 2023).

IV- Conclusion:

Technology has emerged as a powerful driver of growth for Islamic banking in Indonesia. The experience of BSI underscores how digital innovation can enhance customer engagement, operational excellence, and religious alignment in a rapidly evolving financial ecosystem.

Looking ahead, the continued evolution of Islamic banking in Indonesia will depend on the ability of institutions like BSI to harness emerging technologies—including artificial intelligence, blockchain, and open banking—while maintaining adherence to Shariah principles. By doing so, Islamic banks can position themselves as leaders in ethical finance and sustainable development, both regionally and globally.

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