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THE ROLE OF DIGITAL INNOVATIONS IN IMPROVING ISLAMIC BANKING SERVICES

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ABSTRACT. This article examines the role of digital innovations in improving Islamic banking services while maintaining Shariah compliance, customer trust, and financial stability. The study focuses on mobile banking, artificial intelligence (AI), blockchain, smart contracts, fintech collaboration, and RegTech. Recent data show that global Islamic finance assets reached US$5.98 trillion in 2024, while Islamic banking assets grew by 17.05% year-on-year. Digital technologies can reduce service costs, accelerate banking processes, improve transparency, expand access to Shariah-compliant products, and enhance customer experience. However, cybersecurity, data privacy, digital exclusion, and Shariah governance remain important challenges.
Keywords: Islamic banking, digital innovation, Islamic fintech, artificial intelligence, blockchain, Shariah compliance, financial inclusion.

АННОТАЦИЯ. В статье рассматривается роль цифровых инноваций в совершенствовании услуг исламского банкинга при соблюдении принципов шариата, сохранении доверия клиентов и финансовой стабильности. Основное внимание уделяется мобильному банкингу, искусственному интеллекту (ИИ), блокчейну, смарт-контрактам, финтех-сотрудничеству и RegTech. По последним данным, активы мировой исламской финансовой индустрии в 2024 году достигли 5,98 трлн долларов США, а активы исламского банковского сектора выросли на 17,05% в годовом выражении. Цифровые технологии позволяют снизить стоимость услуг, ускорить банковские процессы, повысить прозрачность, расширить доступ к продуктам, соответствующим нормам шариата, и улучшить качество обслуживания клиентов. При этом важными остаются вопросы кибербезопасности, защиты данных, цифрового неравенства и шариатского управления.
Ключевые слова: исламский банкинг, цифровые инновации, исламский финтех, искусственный интеллект, блокчейн, соответствие принципам шариата, финансовая инклюзия.

INTRODUCTION

Islamic banking has developed from a specialized financial model into a systemically important segment of global finance. According to the ICD–LSEG Islamic Finance Development Report 2025, total global Islamic finance assets reached US$5.98 trillion in 2024, representing 21% year-on-year growth. The Islamic Financial Services Board (IFSB) likewise reports strong momentum in Islamic banking: total Islamic banking assets grew by 17.05% year on year in 2024, supported by financing activity, deposits, regulatory reforms, market development and digitalisation initiatives.

This expansion coincides with a fundamental change in customer expectations. Customers increasingly expect remote onboarding, instant payments, continuous access, personalized offers and transparent information through mobile channels. For Islamic banks, however, digital transformation has an additional dimension: technological efficiency must remain consistent

with the prohibition of riba, excessive gharar and maysir, as well as with contractual clarity, asset-backing requirements where applicable, ethical conduct and effective Shariah governance.

Recent research therefore treats digital transformation not simply as an IT upgrade but as a strategic redesign of Islamic financial intermediation. Fintech can improve customer experience and access through digital Islamic banks, mobile payments, crowdfunding, robo-advisory and blockchain-based transparency, while AI can improve operational efficiency and decision support. At the same time, the literature emphasizes regulatory fragmentation, cybersecurity, data privacy, digital literacy and Shariah non-compliance as material constraints.

The purpose of this article is to systematize the main digital innovations relevant to Islamic banking, assess their contribution to service quality and inclusion, identify associated risks, and propose an integrated model for digital service improvement that combines technology, customer value and Shariah governance.

LITERATURE REVIEW

The literature increasingly finds that fintech adoption can improve the efficiency, accessibility and customer orientation of Islamic banking. Sadek et al. (2024) argue that fintech integration in Malaysia's Islamic banking sector can improve operational efficiency and customer engagement while supporting Shariah-compliant financial inclusion. Prasta (2024) similarly identifies trust, regulation and customer satisfaction as important factors shaping digital adoption in Islamic banking.

Research published in 2025 extends this discussion toward the interaction between technology, Shariah governance and inclusion. Ben Ltaifa and Derbali (2025) conclude that digital Islamic banks, mobile payments, halal crowdfunding, Shariah-compliant robo-advisors and blockchain can reduce transaction costs, improve transparency and expand access, although regulatory fragmentation and the digital divide remain constraints. Sadek et al. (2025), mapping the convergence of fintech and Islamic banking, identify blockchain, AI and green fintech as prominent drivers and emphasize adaptive regulation and ethical technological design.

AI is particularly relevant to customer service, fraud detection, credit assessment, process automation and compliance. Harun et al. (2024), based on expert views, report broad recognition of AI's potential to improve the efficiency and effectiveness of Islamic banking operations, while also identifying workforce and governance concerns. More recent work on digital transformation and risk management stresses that AI, big data, automation and blockchain should be embedded within IT-based Shariah governance rather than treated as stand-alone technologies.

A recurring theme is that innovation must not weaken Shariah assurance. Nasution (2025) highlights legal and regulatory gaps concerning electronic contracts, data protection and cross-border digital services, concluding that regulatory clarity and collaboration among regulators, financial institutions and technology providers are essential. Afdawaiza et al. (2024) likewise argue that collaboration among technologists, Shariah scholars and regulators is necessary to preserve Islamic finance integrity during digital transformation.

RESEARCH METHODOLOGY

The study uses a qualitative and analytical research design based on recent academic literature and current industry reports. Methods include systematic synthesis, comparative analysis, logical generalization and indicator-based assessment. The analytical unit is the Islamic banking service journey, covering customer acquisition and e-KYC, account opening, payments, deposits and investment accounts, financing applications, contract execution, customer support, monitoring and compliance.

The assessment is organized around five dimensions: service accessibility, operational efficiency, customer experience, Shariah compliance and digital risk resilience. Recent market statistics from the IFSB, ICD–LSEG and the Global Islamic Fintech Report are used to place the academic findings in the current industry context.

MAIN AND THEORETICAL PART

DIGITAL INNOVATION AND THE ISLAMIC BANKING SERVICE MODEL

Digital innovation changes Islamic banking by separating service delivery from the physical branch and embedding financial products into mobile, data-driven and interoperable platforms. The core economic value is not digitisation itself, but the ability to reduce transaction frictions while preserving the contractual and ethical features that distinguish Islamic finance.

Mobile and digital banking provide the most visible improvement. Digital onboarding, biometric identification, electronic signatures and 24/7 mobile access can reduce waiting time and branch dependency. For customers in areas with limited physical banking infrastructure, these channels can widen access to Shariah-compliant savings, payments and financing. This supports the financial-inclusion objective recognized in both Islamic fintech research and IFSB guidance.

AI can improve service through chatbots, document processing, fraud detection, customer segmentation, alternative-data credit assessment and personalized financial guidance. In Islamic banking, AI may also support Shariah review by screening transaction attributes and flagging potentially non-compliant structures for human review. However, final Shariah judgments should remain subject to accountable governance, transparent rules and qualified Shariah oversight.

Blockchain and smart-contract technologies can strengthen traceability and reduce reconciliation costs where their implementation is legally and operationally appropriate. They are particularly relevant to transactions that benefit from auditable ownership records, transparent execution conditions and multi-party verification.

Open APIs and partnerships between Islamic banks and fintech companies can accelerate innovation by allowing banks to integrate payment, identity, analytics and specialized financing solutions without building every capability internally. Such collaboration also introduces third-party, outsourcing, concentration and data-governance risks, making vendor due diligence and clear accountability essential.

CURRENT MARKET EVIDENCE

Recent industry data show why digital capability has become strategically important. ICD–LSEG reports global Islamic finance assets of US$5.98 trillion in 2024. IFSB reports that Islamic banking assets grew 17.05% year on year in 2024; financing and deposits grew 9.96% and 8.76%, respectively. These figures indicate that Islamic banks are expanding while simultaneously facing the need to serve a larger and more digitally demanding customer base.

The Islamic fintech segment is also scaling. The Global Islamic Fintech Report 2025/26 estimates US$198 billion in transaction volume and assets under management in 2024/25 and projects US$341 billion by 2029, equivalent to an 11.5% compound annual growth rate. The global ecosystem has expanded to 484 Islamic fintech companies. This growth broadens the range of potential partners and competitors for Islamic banks across payments, alternative finance, wealth management, crowdfunding and tokenised assets.

Table 1. Digital innovations and their role in improving Islamic banking services

Digital innovation	Service improvement	Potential Shariah/governance issue	Recommended control
Mobile banking &	Faster onboarding,	Identity, consent,	Strong e-KYC,

e-KYC	24/7 access, lower branch dependence	digital exclusion	accessibility and customer-support controls
Artificial intelligence	Personalization, fraud detection, faster processing	Bias, explainability, model error, inappropriate automated advice	Human oversight, model validation, Shariah review of use cases
Blockchain & smart contracts	Traceability, automation, auditable records	Contract validity, asset/transaction structure, legal enforceability	Pre-deployment Shariah and legal validation
Open APIs / fintech partnerships	Faster innovation and wider service ecosystem	Third-party, data-sharing and outsourcing risks	API security, vendor due diligence and clear accountability
RegTech / automated compliance	Continuous monitoring and faster exception detection	False positives, overreliance on automation	Risk-based rules, audit trails and expert escalation

Source: Compiled by the author based on recent studies on digital transformation and Islamic banking (Sadek et al., 2024), (Afdawaiza et al., 2024), (Harun et al., 2024), and (Sadek et al., 2025).

The table demonstrates how major digital innovations contribute to improving Islamic banking services while also creating specific Shariah and governance challenges. Mobile banking and e-KYC enhance accessibility and accelerate customer onboarding, while artificial intelligence supports personalization, fraud detection, and faster service delivery. Blockchain and smart contracts can improve transparency, traceability, and automation, whereas open APIs and fintech partnerships expand the digital service ecosystem. RegTech strengthens continuous compliance monitoring and helps identify potential irregularities more efficiently. However, these technologies may also create risks related to data privacy, algorithmic bias, contractual validity, third-party dependence, and excessive reliance on automation. Therefore, Islamic banks should combine digital innovation with strong Shariah supervision, human oversight, cybersecurity measures, model validation, and effective internal controls.

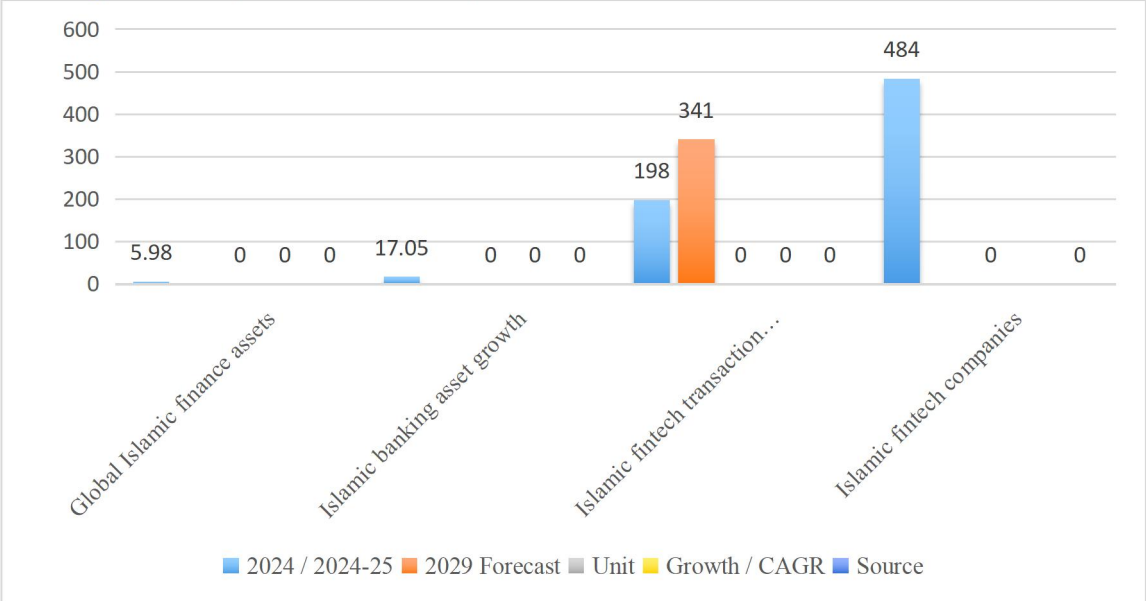


Figure 1. Growth of the Global Islamic Fintech Market, 2024/25–2029

Source: Compiled by the author based on the Global Islamic Fintech Report 2025/26.

The figure shows that the global Islamic fintech market, measured by transaction volume and assets under management, was estimated at US$198 billion in 2024/25 and is projected to reach US$341 billion by 2029, representing an estimated compound annual growth rate of 11.5%**.** The projected increase reflects the growing adoption of digital payments, fintech platforms, mobile financial services, and Shariah-compliant digital financial solutions.

The table summarizes the main ways in which digital technologies can improve Islamic banking services and identifies the corresponding Shariah and governance risks. Mobile banking and e-KYC can improve accessibility and accelerate customer onboarding, while AI can support personalization, fraud detection and operational efficiency. Blockchain and smart contracts can strengthen transparency and traceability, whereas open APIs can facilitate cooperation between Islamic banks and fintech companies. However, these innovations require appropriate Shariah supervision, cybersecurity measures, data governance, model validation and internal controls to ensure that technological development remains consistent with Islamic banking principles.

CONCLUSION

Digital innovation is becoming a central determinant of service quality and competitiveness in Islamic banking. Mobile banking, AI, blockchain, open APIs and RegTech can improve accessibility, speed, transparency, personalization and operational efficiency. Their value is especially significant where they reduce the cost of serving SMEs, remote communities and customers seeking convenient Shariah-compliant alternatives.

Current market evidence reinforces the urgency of transformation: global Islamic finance assets reached US$5.98 trillion in 2024, Islamic banking assets grew by 17.05% year on year, and the Islamic fintech market reached an estimated US$198 billion in transaction volume and assets under management in 2024/25. The opportunity is therefore substantial, but digital growth must be accompanied by robust cybersecurity, data governance, operational resilience and Shariah oversight.

The central policy implication is that Islamic banks should not pursue technology adoption as an end in itself. Sustainable digital transformation requires a customer-centered and Shariah-by-design approach in which technological innovation, measurable service outcomes, ethical data use and accountable governance reinforce one another.

RECOMMENDATIONS

– Introduce a unified digital-service dashboard combining customer experience, operational, cyber-risk, inclusion and Shariah-compliance indicators.

– Embed Shariah review into the full digital product lifecycle, including AI models, smart contracts, APIs and tokenised products.

– Strengthen AI governance through model inventories, validation, explainability standards, bias testing and human oversight.

– Expand secure fintech partnerships and open APIs while applying rigorous third-party risk management and data-protection controls.

– Use digital onboarding and alternative service channels to expand access for SMEs and underserved customers without creating digital exclusion.

– Implement continuous cyber monitoring, multifactor authentication, transaction anomaly detection and regular customer awareness programs.

– Publish clear digital disclosures explaining Shariah structures, customer rights, pricing, data use and complaint mechanisms.

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