

# Enabling Cashless Retail Transactions: Scope And Framework For Quick Response Code System In Nigeria.



OALP Technology Innovation and Fintech Newsletter

## INTRODUCTION

In the last decade, the use cases of quick response (QR) codes<sup>1</sup> have evolved from being a tool to facilitate information sharing into a pivotal tool to facilitate payments.<sup>2</sup> Notably, QR codes have experienced rapid growth since the COVID-19 pandemic to become a dominant force in the global retail economy especially in countries such as China<sup>3</sup> and India.<sup>4</sup>

This evolution, especially in relation to payments, has been driven by the increased global penetration of smartphones,<sup>5</sup> convenience, cost-effectiveness, and versatility of QR codes. A reported 44.6% of internet users had scanned a QR code at least once, as of 2023.<sup>6</sup> This rise is further linked to the growing popularity of contactless payments, and QR code use is expected to reach \$3 Trillion globally this year.<sup>7</sup>

Nigeria, with its rapidly growing fintech ecosystem, teeming youth population and increasing smartphone usage, is enabling the adoption of QR codes in retail transactions,

offering merchants and consumers an easier, faster, and safer alternative to cash and traditional card payments.

In this newsletter, we have explored the legal and regulatory framework governing the use of QR codes as a payment method within Nigeria's retail market.

We have further highlighted the roles of key participants involved in supporting the end-to-end lifecycle of QR code-based transactions.

Additionally, the newsletter assesses the potential impact of QR systems on retail payments, particularly as the Central Bank of Nigeria (CBN) continues its drive toward a widespread contactless payment regime.

1. Article 1.0 of the Framework for Quick Response Code Payments in Nigeria states that. QR codes are a kind of matrix barcode representing information presented as square grids, made up of black squares against a contrasting background, that can be scanned by imaging devices, processed and transmitted by appropriate technology
2. Roshan Mayanglambam, "QR Code History: A Technology That Simplifies Our Daily Lives (QRCodeChimp, 15 January 2025) < <https://www.qrcodechimp.com/qr-code-history/> > accessed 7 April 2025.
3. Alipay and WeChat Pay, the two leading digital payment platforms in China, account for over 90% of the country's mobile payments market - Aaron Klein, "China's digital payments revolution" (The Brookings Institution, April 2020) <https://www.brookings.edu/articles/chinas-digital-payments-revolution/> accessed 7 April 2025.
4. Sanyal Mandeep and Saif Mohammed, "Revolution of QR Code UPI payment option: A Study" (2025) 14(12) Journal Impact Factor [https://www.researchgate.net/publication/388173355\\_Revolution\\_of\\_QR\\_Code\\_UPI\\_payment\\_option\\_A\\_Study](https://www.researchgate.net/publication/388173355_Revolution_of_QR_Code_UPI_payment_option_A_Study) accessed 7 April 2025. India's Unified Payments Interface (UPI) QR code framework has transformed the informal retail sector by offering a seamless, interoperable, and cost-effective digital payment solution accessible to even the smallest street vendor
5. Statista estimates a staggering 6.2billion smartphone users globally by 2029 - Statista Research Department, "Number of smartphone users worldwide 2014-2029" 3 March 2025 < <https://www.statista.com/forecasts/1143723/smartphone-users-in-the-world-> accessed 7 April 2025.
6. Rohan Jambhale and Saisuman Revankar, "QR Code Statistics By Usage, Adoption, Behavior, Demographics, Benefits, Impacts and Facts" (Electro IQ, 24 January 2025) < <https://electroi.com/stats/qr-code-statistics/> > accessed 7 April 2025.
7. Jupiter Research, "QR Code Payments to Reach \$3 Trillion Globally by 2025" (May 2022) < <https://www.jupiterresearch.com/en-us/press/qr-code-payments-to-reach-3trn-globally/> > accessed 7 April 2025.

## TYPES OF QR CODE SYSTEMS USED IN RETAIL TRANSACTIONS

Generally, retail payments leveraging QR Codes utilise either static or dynamic QR codes. The choice of QR codes by merchants is driven by scale, technology access, ease of setup, and customer preferences.<sup>8</sup>

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### STATIC QR CODE



A static QR code is typically printed and contains fixed information<sup>9</sup> which remain unchanged across transactions. Since the information is not transaction-specific, customers are typically required to input the payment amount manually after scanning the code<sup>10</sup>

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### DYNAMIC QR CODE



In contrast, a dynamic QR code is generated uniquely for each transaction with the following transaction-specific information embedded within: the exact amount to be paid, a unique transaction reference, a timestamp, and in some cases, an expiry date to ensure the code is not reused.<sup>11</sup>

Fundamentally, the QR code system exists in two models namely the merchant-presented QR code model and the customer-presented QR code model.



### MERCHANT-PRESENTED QR CODE MODEL

In the merchant-presented model, the merchant displays a static or dynamic QR code (usually at the point of sale (POS)), and the customer scans the QR code using their mobile banking app, digital wallet, or payment app to initiate and complete the payment transaction.



### CUSTOMER-PRESENTED QR CODE MODEL

Whereas, in the customer-presented model, the customer generates and displays a QR code on their mobile device, typically through a mobile banking app, digital wallet, or payment app and the merchant then scans this QR code using a POS device or QR code scanner to initiate and complete the payment transaction. In Nigeria, the CBN has directed that only the merchant-presented model be adopted as the standard specification rather than the customer modelled version.<sup>12</sup>

## LEGAL AND REGULATORY FRAMEWORK FOR QR CODES

Pursuant to its mandate to ensure the safety and stability of the Nigerian financial system, to promote the adoption of electronic payment channels, and encourage innovation within the payments ecosystem, the CBN issued the Framework for QR Code Payments in Nigeria in January 2021 (**QR Code Framework**<sup>13</sup>). The objective of this Framework is to prescribe acceptable QR code standards, interoperability obligations for implementing QR payments, the roles and responsibilities of participants in QR payments, as well as the risk management principles for QR code payments in Nigeria.

Further to the QR Code Framework which empowered the Nigeria Inter-Bank Settlement System (**NIBSS**) as a Payment Terminal Service Aggregator (**PTSA**) to certify QR codes payments applications, updates and patches, and drive interoperability, the NIBSS issued the Framework for Certification of Quick Response Code 2021 (**Certification Framework**) which details the requirements for certifying independent QR codes developed by applicant institutions.<sup>14</sup> The objective is to ensure QR codes issued in the country meets all required standards and minimum specifications as posited in the QR Code Framework.<sup>15</sup>

8. Joe Baker, "QR code payments: Linking payments across borders" (FXC Intelligence, 7 march 2024) <https://www.fxcintel.com/research/reports/ct-qr-code-payments> accessed 7 April 2025.

9. This includes information such as the merchant's name, bank account number or wallet ID, and the identifier of the payment service provider or bank facilitating the transaction.

10. *Ibid.*

11. *Ibid.*

12. Article 3.0 (3.4) of the QR Code Framework.

13. Access our article for further information on the QR Code Framework in this link: <https://www.olaniwunajayi.net/wp-content/uploads/2021/01/The-CBN-Framework-for-Quick-Response-QR-Code-Payments-in-Nigeria.pdf>

14. Article 1.1 of the Framework for Certification of Quick Response Code 2021.

15. Article 1 of the Certification Framework. To further support the use of QR Codes in Nigeria, the Nigeria Inter-Bank Settlement System (NIBSS), on March 16, 2021, launched the New Quick Response (NQR) code payment solution on behalf of all financial service providers. This solution offers a robust platform that delivers instant value for person-to-business (P2B) and person-to-person (P2P) transactions by simply scanning to pay.

## PARTICIPANTS INVOLVED IN DEPLOYMENT OF QR CODES

The QR Code Payment system in Nigeria is a collaborative environment involving multiple key participants, each playing a distinct role in enabling secure and efficient transactions. Collectively, the participants form a robust and interoperable relationship that supports the end-to-end lifecycle of QR code-based payments in Nigeria.

At the apex of this relationship are:

- the merchants<sup>16</sup> who initiate the transaction by presenting the QR code to customers at the point of sale.
- Customers<sup>17</sup> who scan the code using their mobile banking apps, wallets, or payment platforms to authorise the payment.

Supporting this interaction are issuers<sup>18</sup> that provide customers with the payment platforms through which QR code based payments are made.

On the merchant-facing side, acquirers<sup>19</sup> facilitate the receipt of payments on behalf of the merchants by providing the infrastructure and accounts necessary for processing and settling the transaction.

Lastly, Payment Service Providers<sup>20</sup> serve as the technological backbone of the QR system, offering the platforms, Application Programming Interfaces, and security protocols that connect issuers, acquirers, and merchants, whilst ensuring that transaction data flows smoothly, securely, and in real-time. To prevent, detect and mitigate fraud and money laundering, issuers and acquirers are responsible for ensuring behavioural monitoring and fraud management systems are implemented.<sup>21</sup>

In its role as PTSA, the NIBSS developed and the Nigeria Quick Response (**NQR**) payment solution, a QR-code-based payment and collections solution<sup>22</sup> designed to facilitate seamless, instant transactions on a Person-to-Person basis and Entity-to-Person basis.<sup>23</sup> The NQR solution addresses the critical need to unify and standardise fragmented, financial institution-specific QR code schemes, enabling greater interoperability and efficiency across the payments ecosystem.

## POTENTIAL IMPACT OF QR SYSTEMS ON RETAIL TRANSACTIONS IN NIGERIA

QR code payment systems offer a range of compelling benefits that are increasingly relatable to Nigerian merchants and consumers alike. QR Code systems are relatively more cost-effective in comparison to maintaining traditional POS terminals. A merchant only requires a printout or a smart phone to implement the QR system and QR payments can be used across multiple branches or sales points without the need for replicating costly hardware setups. This cost advantage makes it easier for retailers to transition from cash-only operations to accepting digital payments, enhancing their business operations and potentially attracting a wider customer base.

Speed and convenience also define the QR experience by enabling quick scan and pay transactions. This not only streamlines the checkout process but also addresses delays sometimes associated with POS transactions due to network issues or malfunctioning POS device. Additionally, QR systems contribute to the reduction of risks associated with cash handling. With electronic audit trails and encrypted transaction details, merchants and customers are less exposed to theft, counterfeit notes, and the inaccuracies of manual record-keeping.<sup>24</sup> The payment trail also enhances transparency, making it easier for businesses to track revenue and analyse performance.

It is important to note that where a static QR code model is adopted, additional security measures must be implemented to guard against potential fraud risks. This is because static QR codes, which display fixed payment information, are more susceptible to tampering such as code replacement or redirection to fraudulent accounts. To mitigate these risks, merchants and payment service providers should adopt safeguards like QR code authentication, transaction verification protocols, and regular monitoring to ensure the integrity and safety of the payment process.

16. Article 5.0 (i) of the QR Code Framework.

17. Article 5.0 (ii) of the QR Code Framework.

18. Article 5.0 (iii) of the QR Code Framework. Issuers include banks and mobile wallet providers.

19. Article 5.0 (iv) of the QR Code Framework. Acquirers include banks and payment processors.

20. Article 5.0 (v) of the QR Code Framework.

21. Article 7.0(f) of the QR Code Framework.

22. Nigeria Inter-Bank Settlement System, "Media Updates" <<https://nibss-plc.com.ng/nibss-launches-nqr-code-for-financial-services-providers/>> accessed 5 June 2025.

23. *Ibid.*

24. *Ibid.*

## CONCLUSION

As consumer preferences continue to shift toward contactless and mobile-first experiences, QR code adoption presents a strategic opportunity for retailers to modernise operations, improve efficiency, and deepen consumer engagement. With one of the highest mobile phone penetration rates in Africa and millions of users already familiar with mobile banking and digital wallet,<sup>25</sup> Nigeria is well positioned for the widespread adoption of QR code payment systems. However, to sustain and scale the progress, the CBN and NIBSS must remain proactive by continuously refining the regulatory framework to address evolving merchant and customer concerns while adapting to international best practice.

25 HITRUST team, "Securing Southeast Asia's QR Payments: Key Security Challenges and Solutions" (HITRUST, 21 January, 2025)

[https://www.hitrust.com/blog/Securing%20Southeast%20Asia's%20QR%20Payments\\_Key%20Security%20Challenges%20and%20Solutions.html](https://www.hitrust.com/blog/Securing%20Southeast%20Asia's%20QR%20Payments_Key%20Security%20Challenges%20and%20Solutions.html) accessed 5 June 2025.

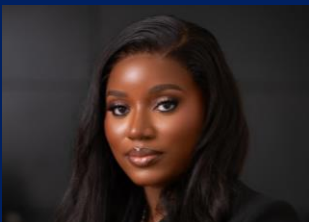
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