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# BANK OF BARODA

## bob ₹ Pay - UPI Global Connect

### Abstract

India's Unified Payments Interface (UPI) is among the most robust digital public infrastructures globally, revolutionising domestic retail payments through interoperability, accessibility and real-time settlement. Yet cross-border retail payments relied on fragmented international networks characterised by high transaction costs, opaque foreign exchange markups, settlement lags and operational inefficiencies. Bank of Baroda's *bob ₹ Pay – UPI Global Connect* was devised as a strategic move to internationalise India's digital payment landscape and deliver UPI's advantages to Indian travellers, Non-Resident Indians (NRIs) and overseas Indian communities. The initiative enabled UPI-based merchant payments in nine global markets, adding inward remittance functionality and NRI connectivity via NRE and NRO accounts. The platform leveraged secure APIs, scalable architecture, instant forex visibility, consent-driven activation, advanced fraud monitoring and QR interoperability to create a cohesive cross-border payment network. By redefining UPI as a global payments rail rather than a local mechanism, the project illustrates how native digital infrastructure can be scaled into an international financial framework. The initiative enhances customer convenience, financial inclusion, transparency and global recognition of India's Digital Public Infrastructure (DPI).

### Introduction

Bank of Baroda launched *bob ₹ Pay - UPI Global Connect* as a pioneering digital banking initiative to redefine cross-border retail payments by using India's indigenous UPI infrastructure. The platform delivers a faster, simpler and more powerful payment ecosystem, extending UPI's functionality beyond domestic transactions to enable global merchant payments in nine countries: Mauritius, Nepal, Bhutan, the UAE, Singapore, Sri Lanka, the USA, Qatar and France.

The initiative addressed systemic inefficiencies in global payment systems that forced Indian travellers and NRIs to rely on cash exchanges, cards or costly remittance channels. The project delivered international QR-based merchant payments, inward remittance services and NRI integration

within a unified platform. Customers traveling abroad could activate UPI Global in the *bob ₹ Pay* app and pay merchants directly through UPI-compatible QR codes.

The project followed a phased rollout featuring strategic planning, regulatory alignment, technology development, pilot launches and carefully managed international expansion. The solution aligned with the Reserve Bank of India (RBI) and NPCI's strategic objectives of UPI internationalisation and the export of Digital Public Infrastructure abroad. By integrating real-time FX transparency, secure settlements, fraud controls and a scalable architecture, Bank of Baroda created a replicable global payments model poised to drive international financial interoperability.

## The Problem Statement

India's digital economy has rapidly modernised domestic payments, yet international retail transactions still depend on legacy methods such as cards, currency exchange counters, SWIFT remittances and intermediary-heavy settlements. Indian travellers abroad face challenges, including cumbersome currency exchange, excessive forex markups, hidden charges and fragmented experiences.

For Non-Resident Indians, the challenges were equally significant. Despite UPI's widespread success in India, NRIs faced difficulties in using UPI with their NRE and NRO accounts. International remittances for family maintenance often caused delays, high service charges, reliance on intermediaries and limited transaction transparency. These inefficiencies created friction for overseas Indians seeking affordable and convenient access to Indian payment systems.

A major obstacle was the lack of transparency in foreign exchange conversion and cross-border charges. Customers regularly faced unpredictable exchange rates and hidden fees when making global payments, which reduced trust and weakened existing payment channels.

Bank of Baroda recognised that these challenges required more than incremental fixes. A fundamental transition to interoperable digital payments was essential to extend UPI's simplicity and efficiency globally. This project was conceived not as a banking product but as a strategic infrastructure initiative aligned with India's policy to advance digital public infrastructure worldwide.

## Solutions Stack

The solution architecture of *bob ₹ Pay - UPI Global Connect* was developed as an integrated cross-border payment ecosystem. It combined merchant payments, inward remittances, NRI enablement, regulatory compliance and digital security frameworks.

The first component enabled international merchant payments via QR code compatibility. Bank of Baroda operated as both Issuer and Acquirer across nine markets, Mauritius, Nepal, Bhutan, Singapore, UAE, USA, France, Qatar and Sri Lanka. Travelers in these countries could pay for goods and services by scanning UPI-compatible QR codes via the *bob ₹ Pay* app. The platform required users to activate the "UPI Global" feature before starting international transactions.

The second component transformed inward remittances by introducing UPI-driven remittance capabilities, reducing dependency on traditional SWIFT settlements and third-party intermediaries. This improved transaction efficiency and lowered delays and operational costs.

The third component focused on NRI financial inclusion. By integrating NRE and NRO account functionalities into the UPI ecosystem, the platform enabled NRIs to join India's domestic digital payments system.

The technology stack incorporated scalable APIs, real-time FX engines, secure settlement, fraud detection and rigorous cybersecurity protocols. Consent-driven activation or deactivation for international features further strengthened user control and transaction governance.

A key differentiator was the platform's commitment to FX transparency. Unlike most international systems, which obscure costs and undermine trust, *bob ₹ Pay* offered real-time visibility into exchange rates and transaction values.

### Institutional Vision and Strategic Context

The conceptual foundation of *bob ₹ Pay - UPI Global Connect* was rooted in the belief that UPI could evolve beyond a domestic payment ecosystem. It could become a globally interoperable digital payment framework. Bank of Baroda strategically decided to leverage UPI as a global payment rail, rather than rely on traditional card-based models. This decision aligned with the broader RBI and NPCI vision of UPI internationalisation and India's ambition to export its digital public infrastructure globally.

The project was spearheaded by Bank of Baroda's Digital Banking vertical. Senior institutional stakeholders led digital product development, operations, governance and business growth. The initiative reflected a coordinated strategy across Digital Banking, IT, Risk, Compliance, International Banking and Operations teams.

A crucial institutional takeaway during implementation was that customers' trust in cross-border digital payments rests not only on technical efficiency, but also on familiarity and visible transparency. The team noted that transparent FX rates, instant confirmations and an intuitive UPI interface rapidly boosted confidence and accelerated adoption among travellers and NRIs.

The initiative adopted a customer-centric design philosophy focused on simplicity, interoperability, security and transparency. This strategic focus set the platform apart from conventional international payment systems, which often remain fragmented, costly and operationally opaque.

### Implementation Journey

The implementation process followed a phased, institutionally governed model. This approach ensured regulatory compliance, operational resilience and customer readiness.

The first phase involved strategic conceptualisation and customer pain-point identification. Bank of Baroda analysed the challenges faced by Indian travellers and NRIs in cross-border payment environments and identified UPI interoperability as a strategic solution pathway.

The second phase focused on regulatory alignment and ecosystem partnerships. The Bank engaged closely with NPCI International Payments Limited (NIPL) and aligned the project with international regulatory requirements, RBI guidelines, FEMA compliance obligations and settlement protocols.

The third phase involved technology

design and platform development. This included architecture development for cross-border settlements, API integration, foreign exchange conversion systems, QR interoperability, NRI account enablement and fraud risk monitoring. Sandbox testing and system validation were undertaken before live deployment.

The fourth phase involved pilot launches in select countries with high Indian traveller footfall. These pilots were used to validate QR acceptance, customer experience, settlement cycles, transaction success rates and exception-handling systems. Feedback from these deployments was incorporated into platform refinements before full-scale rollout.

The final phase involved expansion and scale-up across nine international markets supported by customer awareness initiatives, operational readiness measures and ecosystem integration.

## Challenges and Responses

Cross-border payment infrastructure involves significantly greater operational complexity than domestic digital payment systems. One of the primary implementation challenges involved integration with global QR ecosystems, acquiring banks and NPCI interoperability frameworks across multiple geographies.

Foreign exchange transparency and settlement reconciliation also posed major operational challenges. The platform had to maintain accurate, transparent conversion visibility while ensuring settlement integrity across multiple jurisdictions and currencies.

Customer awareness and trust-building represented another important challenge. Since international UPI usage was still a relatively new concept, the Bank invested in phased deployments, customer education and operational support systems to build familiarity and confidence.

The project also required enhanced AML controls, fraud monitoring systems, transaction limits and real-time alert mechanisms, given the elevated risk profile of cross-border transactions. The Bank responded by strengthening governance frameworks and establishing close coordination between Digital Banking, Compliance, Risk, Operations and International Banking teams.

An important lesson from the project was that successful international digital payment systems depend not only on technological capability but also on ecosystem maturity. The quality of local QR acceptance networks, settlement infrastructure and acquiring partnerships directly influenced customer experience and operational continuity.

## Highlights

- Bank of Baroda launched *bob ₹ Pay – UPI Global Connect* to extend India's UPI infrastructure internationally, enabling QR-based merchant payments, inward remittances and NRI connectivity across nine countries including the UAE, Singapore, USA, France and Nepal.
- The initiative addressed key cross-border payment challenges such as high forex charges, hidden fees, dependence on cash/cards, delayed remittances and limited access for NRIs by offering real-time, transparent and interoperable UPI payments globally.
- The platform integrated scalable APIs, QR interoperability, real-time FX visibility, fraud monitoring, consent-based activation and NRE/NRO account support to create a secure and customer-friendly international payments ecosystem.
- Implementation followed a phased approach involving regulatory alignment with RBI and NPCI, sandbox testing, pilot launches, international ecosystem partnerships and strong AML, cybersecurity and governance frameworks.
- The project improved convenience and transparency for Indian travellers and NRIs, reduced transaction friction and forex markups and demonstrated how India's Digital Public Infrastructure can evolve into a globally scalable payment framework.

## Outcomes

The implementation of *bob ₹ Pay - UPI Global Connect* generated significant customer, institutional and strategic outcomes. The initiative enabled faster, cheaper and more transparent cross-border payments for Indian travellers and overseas Indians. Customers can make international merchant payments directly via QR-based UPI transactions, without relying on foreign cash or expensive card-based systems.

The project significantly enhanced customer convenience by eliminating currency exchange hassles and enabling familiar “scan-and-pay” functionality internationally. The platform also improved trust through transparent exchange rates, real-time transaction confirmations and simplified payment flows.

From an economic perspective, the initiative reduced transaction friction and lowered foreign exchange markups compared to traditional payment mechanisms. It also improved customer engagement with the *bob ₹ Pay* ecosystem by positioning the platform as a globally interoperable payment solution rather than merely a domestic application.

Strategically, the initiative strengthened the international presence of the Indian digital payment infrastructure. By operationalising UPI-based payments across nine countries, Bank of Baroda demonstrated the scalability and exportability of India's Digital Public Infrastructure model.

## Conclusion

*Bob ₹ Pay - UPI Global Connect* represents an important milestone in the evolution of India's digital financial infrastructure from a domestic payment innovation into a globally scalable financial ecosystem. The initiative demonstrates how interoperable digital public infrastructure can address longstanding inefficiencies in cross-border retail payments while simultaneously advancing financial inclusion, customer convenience and digital sovereignty.

Its significance lies not only in its technological innovation but also in its policy relevance. By aligning institutional strategy with RBI and NPCI's broader vision of UPI internationalisation, Bank of Baroda successfully positioned UPI as a global payment system capable of competing with conventional card-based payment systems. The initiative further demonstrates that successful digital payment transformation requires a convergence of regulatory coordination, customer-centric design, operational governance, scalable architecture and ecosystem partnerships.



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