



Evolution of Cross-Border Payments Landscape

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Cross-Border Payment Arrangements

Cross-Border Payment arrangements

- Centralised infrastructure and service providers
- Correspondent/ intermediary banks
- Uses Nostro-vostro arrangement
- Instructions through SWIFT
- Dominant settlement currencies
- Suited for large value payments/ trade payments

Credit/Debit Card Payments

- Connects individuals and merchants across the globe
- Real-time authorization, familiar infrastructure

Drivers for Alternate Arrangements

Cross-border payments growing significantly in last decades

Demand for low-cost remittances & cross-border trade needs

Technology-driven innovations enabling alternate arrangements
- Local payment rails have become efficient

Geopolitical developments leading to search for alternate arrangements

Global payments were a stable, "invisible infrastructure"; innovations and requirements leading to search for alternate arrangements

Emerging Trends

Alternate Messaging and Settlement Networks

- Building Parallel Rails: Creating alternative payment messaging/settlement systems
- Bilateral Connectors: Direct links between national systems

Local-Currency and Regional Settlement

- Local currency invoicing: Trade partners looking to use of local currencies
- Regional schemes: Cross-border linkages among neighboring payment systems (including instant payment rails and card networks)

Emerging Trends

Card network substitution

- Domestic card schemes and regional acceptance partnerships for cross-border usage

Deepening of financial market

- Market-makers, products, clearing banks, and CCPs arrangements support multi-currency settlement

Innovative payment mechanism

- CBDCs for cross-border payments
- Use of stable coins, DLT and digital assets
(Prudential and financial stability concerns; scalability issues)

Cross-Border Payment Landscape in India

Cross-border payment ecosystem is evolving to support trade, remittances, and digital commerce

Retail (P2P and P2M)

- Linking of UPI (India's fast payment systems) with FPSs of partner countries for P2P transactions
- Linking of UPI with aggregators/ operators overseas for cross-border P2M transactions
- Rupee Drawing Arrangements- for remittances
- PA-CB for facilitating cross-border transactions.

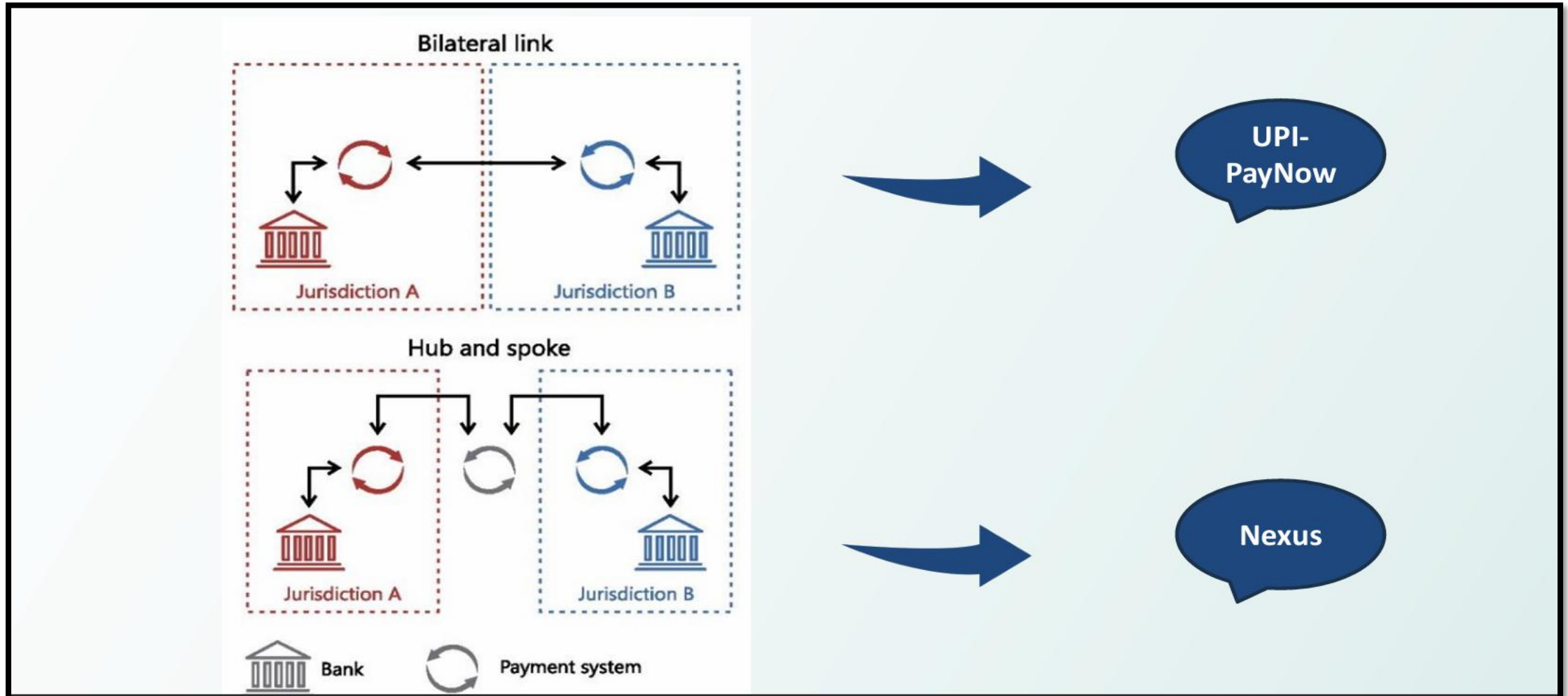
Wholesale

- SFMS Global Hub
- Local Currency Settlement System

UPI Interlinkage for Cross-Border P2P Remittances

- Objectives- speed, cost-efficient, wider accessibility, transparency in pricing
- Remittances can be sent using proxy/ Virtual Payment Addresses
- Use of APIs for validation of the beneficiary, currency conversion, compliance requirements etc.
- Wide accessibility of the payment linkage facility through mobile banking apps, Third Party Application Providers, Internet banking etc.
- Upfront display of FX conversion and fees charged by the banks ensure transparency
- Prefunding arrangement of the settlement banks (nostro-vostro) obviates settlement risks
- Real time and cost efficient alternative channel compared to the traditional correspondent banking channel

FPS Interlinking – Bilateral and Multilateral



UPI Interlinkage with Aggregators/ Operators overseas for Cross-Border P2M transactions

- Collaboration with international partners enabling Indians to pay to international merchant (P2M) through QR-codes using UPI apps
- Reciprocal arrangements- international consumers can make transactions at UPI terminals in India using their apps
- Merchants receive payments instantly in local currency
- Real-time payment confirmation through interoperable systems
- Settlement backed by prefunding arrangements, on T+1/ T+2 basis
- Reduces dependency on carrying cash overseas, as well as reduces FX mark up due to currency conversion and card payments (possibly lower MDR)

Rupee Drawing Arrangement (RDA)

- RDA- regulated channel to receive cross-border remittances directly into beneficiaries' bank accounts in India
- Quick fund transfer by non-residents to beneficiaries in India
- Tie-ups between overseas exchange houses/Fintechs and Indian banks
- Use of proprietary API and integration with banks for payment instructions- instant, secure and cost – effective; reduces dependency on messaging platforms
- Funds credited to the beneficiary's account by partner bank through domestic payment rails RTGS/ NEFT/ IMPS/ UPI.
- The RDA entities prefund their INR Vostro account held with Indian AD banks obviating settlement risk

Payment Aggregators – Cross-Border (PA-CB)

- Traditional correspondent banking arrangements for small ticket transactions could be expensive- nostro/vostro accounts, messaging cost, complex reconciliation with higher fees, FX spreads, and limited transparency
- Payment Aggregators—Cross-Border (PA-CB)- For online trade, enables quicker settlements via central accounts, reduces liquidity lock-in, and reduces lengthy banking chains
 - All online trades as permitted under the Foreign Trade Policy
 - Requires KYC due diligence
 - Governance, risk, and grievance redress mechanisms

Value Proposition- PA-CBs

- Enables Indian exporters to accept local payment modes of buyers in their jurisdictions—such as internet banking, ACH, local fast payment systems, and local acquiring of card transactions
- Facilitates overseas merchants to integrate and accept Indian payment methods, enhancing the convenience of Indian consumers purchasing globally
- Offers exporters/ overseas sellers comprehensive dashboards for real-time visibility of transactions, refunds, and disputes, leading to improved operational efficiency and better merchant service delivery.
- Enables Indian exporters to access customers across multiple geographies and jurisdictions with simplified payment acceptance
- Improves availability of diverse goods and services for Indian buyers by making it easier to transact with global merchants
- Economies of scale achieved by aggregators translate into lower transaction costs

Initiatives for Wholesale Cross-Border Payments

SFMS Global Hub for
Cross-Border financial
messaging solution

Local Currency Settlement
mechanism for trade

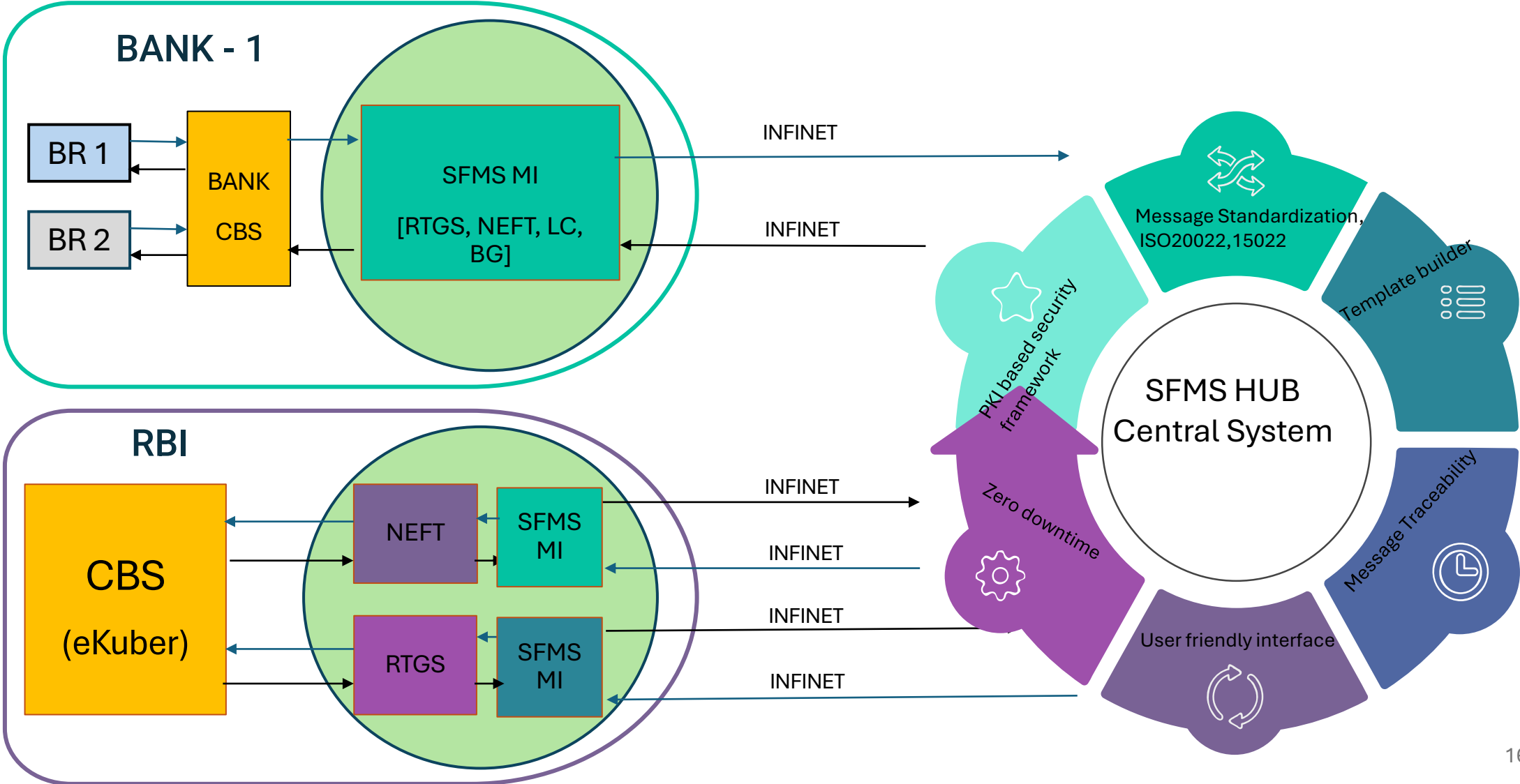
Structured Financial Messaging System

- SFMS- secured communication within and across the System Participants
- Used for various purposes- payments (NEFT, RTGS); trade (LC & BG)
- Intra bank applications make use of SFMS to improve efficiency, transparency & security during message communication
- SFMS uses of Indian Financial NETwork (INFINET)
- There are 241 member participant using SFMS
- User can get onto SFMS in two ways:
 - In Premise (separate SFMS instance)
 - Cloud based

Features of SFMS

- Supports ISO 20022 & other messaging standards with capability to create proprietary formats
- Multi-layered Security – Built-in PKI-based digital signatures, encryption, and secure authentication
- Supports Multiple Financial Systems: Used for applications like RTGS, NEFT, LC, BG, etc.
- Prevents malformed or non-compliant messages from entering the payment system by validating each message before processing
- Integrate with Core Banking Systems (CBS), Treasury applications, and other financial platforms
- Real-time acknowledgment, tracking, and settlement confirmation
- Audit trails and monitoring for compliance and governance
- Support large volumes

SFMS Domestic Architecture



SFMS - Global

- SFMS Global is a messaging rail which can seamlessly establish payment & other service corridors between a domestic participant and a cross-border participant
- On domestic side, SFMS Global would be connected to India's domestic participants and on the other side to the overseas bank(s)/financial institution
- The communication would be based on globally accepted ISO 20022 messaging standards
- Each overseas participant will be provided with a unique identification code - Global Financial System Code (GFSC)
- The settlement of transactions would happen outside the SFMS Global, through correspondent banking channels

Features of SFMS - Global

- Multi-layered Security – Built-in PKI-based digital signatures, encryption, and secure authentication.
- Participants to the SFMS Global Hub will interface using API
- Connectivity – Through Secure VPN
- Real-time acknowledgment, tracking, and settlement confirmation.
- Supports various types of financial messages (payments, settlements, inquiries, confirmations).
- Flexibility – Supports participation through designated entity as well as multiple entities on either side, depending on requirement.

Benefits of SFMS Global

- Alternate channel for financial messaging
- Wider access to domestic participants for cross border messaging
- ISO20022 messaging formats, aligned with global standards
- API based integration
- Lower per transaction cost

Local Currency Settlement System (LCS)

Objectives

- The LCS facility enables bilateral trade transactions between India and partner countries to be settled in their respective local currencies
- Exporters & importers invoice and settle contracts in their own currencies
- Reduces exchange rate risk, dependence on third country currency & facilitates smoother trade settlements
- Strengthen cooperation among banking systems of partner countries

Mechanism

- Participating banks in India and partner countries open corresponding Nostro/Vostro accounts
- Exporters invoice in their home currency; importers pay in their local currency via nominated banks
- The exchange rate for local currency/INR or derived through cross-rates

Benefits

- Eliminates exchange rate fluctuation risk for exporters and importers
- Encourages pricing competitiveness due to stable currency settlements
- Expands trade and economic cooperation between India and partner countries

Way Forward for Cross-Border Arrangements

- Alternate arrangements will compliment the existing arrangements
- **Technology solution and Interoperability**
 - Technology innovations will derive future path
 - Linking of domestic fast payment systems and regional schemes
 - Partnerships- Links could be bilateral/multilateral
 - Use of common standards and APIs for efficiency
 - Role of Fintech and non-bank payment system providers
- **Risk and Compliance**
 - Legal Compliance- aligning with diverse country regulations
 - Efficient multi-jurisdiction sanctions screening- user of RegTech
 - Enable cross-border supervisory data-sharing with privacy safeguards

Way Forward contd..

- **Resilience and Contingency**
 - Fallback rails and test failover for messaging, settlement, and FX
- **Market Development**
 - Develop local-currency market infrastructure and FX pricing (efficient domestic payment system is key)
- **Safeguards**
 - Alternative channels must be affordable and transparent
 - Strengthen dispute resolution, fraud prevention, and user education

Thank you

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References

- Reserve Bank of India website – <https://www.rbi.org.in>
- RBI circular on ‘Regulation of Payment Aggregator – Cross Border (PA - Cross Border)’ - <https://www.rbi.org.in/Scripts/NotificationUser.aspx?Id=12561&Mode=0>
- Bank for International Settlements website – <https://www.bis.org>
- NPCI website - <https://www.npci.org.in>
- NPCI International Payments Limited – <https://www.nipl.com>
- Indian Financial Technology and Allied Services – <https://www.iftas.in>