One network, many apps

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India's UPI rollout and the decision facing Sri Lanka

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Abstract

India's Unified Payments Interface turned bank accounts into an interoperable retail payments network rather than requiring customers and merchants to join the same wallet. Launched in 2016, it combined shared infrastructure, competing apps, simple payment addresses and merchant acceptance with earlier investments in banking access and connectivity. Official transaction statistics show exceptional growth, but do not establish that UPI alone caused financial inclusion, formalisation or economic growth. Original IMF research provides stronger evidence for one mechanism: interoperability widened useful connections and supported adoption. The model also carries costs, concentration risks and persistent fraud. Sri Lanka already possesses fast transfers, account-linked payments and a national QR standard. Its central task is therefore less about copying India's platform and more about converting infrastructure into repeated, trusted merchant usage. This case recommends an activation programme with published reliability, consumer protection and funding conditions, while rejecting demonetisation and permanent unfunded free pricing as templates.

Opening: a QR code is not a payment habit

At the end of 2025, Sri Lanka had 460,990 registered LANKAQR merchants, up from 420,763 a year earlier. Yet payments through domestically operated LANKAQR apps fell from 1.184 million to 1.150 million transactions during those calendar years. More acceptance points had not translated into more measured domestic QR payments. The 2025 transaction figures are provisional. [S8, Tables 22-23]

India offered a tempting contrast. UPI processed approximately 228.28 billion transactions during calendar 2025, compared with 38.73 billion in 2021. [S3, paragraph 2.20; conversions from crore]

A Sri Lankan policymaker considering the next payments programme faces a harder question than "Can we build something like UPI?" Sri Lanka already has a fast interbank rail, account-linked app payments and an interoperable QR standard. What would make a customer and a small merchant choose those rails again tomorrow, without an indefinite subsidy or dependence on one dominant app?

1. The problem: accounts without useful connections

The central payments problem was coordination. A person could have a bank account and still find that their preferred digital payment tool could not reach the merchant, relative or supplier they wanted to pay.

Before UPI, India's IMPS supported bank-to-bank transfers. Some bank accounts could interact with electronic wallets, and customers could transfer within a closed-loop wallet. But users could not generally initiate transfers between bank accounts through third-party apps, or transfer between different closed-loop wallet providers. UPI changed that boundary. A customer's app choice no longer had to match the counterparty's choice. [S4, Box 1]

This is different from "too few bank accounts". Access was a foundation, but access and usage were not equivalent. The World Bank's Global Findex 2021 India brief reported that 78% of adults had an account, while 35% of adults made or received a digital payment through an account. It reported a 35% inactive-account share, meaning account holders had neither deposited nor withdrawn money in the preceding year. These are 2021 survey measures, not estimates of conditions in 2026. [S6]

The managerial challenge was to make accounts useful in everyday exchange. Another isolated wallet could improve its customers' experience while leaving the network fragmented. A shared interface could connect the combined network, but required agreement over access, clearing, settlement, transaction failures and liability. [S4]

The institutional choice

UPI separated shared infrastructure from the interface through which people used it. The NPCI-operated network connected banks and payment providers; banks and fintech firms supplied different apps on that network. RBI authorised UPI and the additional BHIM interface, and supervised the wider payment system. [S1; S4]

The bargain was straightforward: compete over usability and service, not over whether another provider's customer can reach yours. That distinction matters more for Sri Lanka than the Indian product name.

2. What was done, and when

Period	Intervention	Significance and limit
Before UPI	Investment in IMPS, banking access, digital identification and mobile connectivity	Supporting conditions; their individual contributions are not separately estimated here. [S4]
2016	UPI launched; RBI approved operations. NPCI introduced BHIM in late 2016	Interoperable access through participating apps, plus a public-facing entry point. No unverified exact launch day or bank count is used. [S1; S4]
Late 2016 into 2017	Demonetisation disrupted cash availability; temporary low-value digital-payment fee relief accompanied the response	An adoption shock studied by researchers, not a prerequisite of the design or a template for Sri Lanka. [S1; S4]
2017	A major closed-loop provider joined UPI following a regulatory interoperability push	Connected previously separate users, permitting a test of the network mechanism. [S4]
From January 2020	Zero merchant discount rate for BHIM-UPI under amended legislation	Removed the specified merchant fee, not the cost of operating payments. [S5]
FY2024-25	Government approved a targeted small-merchant transaction incentive	Funded eligible low-value merchant payments with some operational-performance conditions. Design evidence, not proof of additional adoption. [S5]

Customers could reach accounts through a participating app, including a third-party app working through a payment-service-provider bank. Virtual payment addresses and QR payments reduced the need to enter bank details at payment. Security controls included device binding and PIN authentication. [S4, Box 1; S5; S7]

BHIM illustrates a possible catalyst rather than a permanent state-app strategy. IMF research records that it initially represented more than half of payer-side transaction value before major private apps took off. A public interface could address an early coordination problem while the private app market developed. This does not establish that a new state app would now solve Sri Lanka's problem. [S4, Box 2; historical early-period measure]

3. Measured outcomes

Exhibit A. UPI activity

Observation period	Volume	Value	Source
FY2016-17	17.9 million transactions	INR69 billion	RBI Annual Report 2017-18, Table IX.1. [S2]
FY2017-18	915.2 million transactions	INR1,098 billion	Same series. [S2]
CY2021	Approximately 38.73 billion transactions	Approximately INR72 trillion	Rounded 3,873 crore transactions and INR72 lakh crore. [S3, paragraph 2.20]
CY2025	Approximately 228.28 billion transactions	Approximately INR300 trillion	Rounded 22,828 crore transactions and INR300 lakh crore. [S3, paragraph 2.20]

India's fiscal year runs April-March. Fiscal-year and calendar-year rows are not a continuous annual series. One crore equals ten million; one lakh crore rupees equals one trillion rupees. Values are nominal INR, not inflation-adjusted or converted to USD.

Desk calculation: the rounded calendar-year volumes imply approximately 5.9 times as many transactions in 2025 as in 2021: 22,828 divided by 3,873. This is an activity multiple, not a user-growth multiple.

RBI reports average UPI transaction sizes of INR1,848 in CY2021 and INR1,313 in CY2025. Falling ticket size is consistent with more small-value activity, but cannot prove that previously excluded households adopted UPI. A changing mix of existing users' payments could produce a similar result. [S3, paragraph 2.20]

In the second half of CY2025, UPI accounted for 85.5% of RBI's total recorded payment-transaction volume but 9.5% of value. RTGS dominated value. The denominator is recorded payment systems, not all purchases in the economy; cash payments are outside this comparison. A large share is not proof of a cashless economy. [S3, paragraph 2.4 and payment-definition notes]

What the statistics do not establish

Payment value is not GDP or new output. Funds can move repeatedly, and a payment can replace another digital instrument rather than cash. UPI totals combine person-to-person and person-to-merchant activity; not every transaction is a purchase.

This case makes no quantified claim about UPI's effect on tax receipts, formal employment, GDP, household income or merchant profitability. Those require separate evidence. Nor does historical Findex settle whether inclusion subsequently improved. Payment-system records measure activity; household surveys measure participation and use.

4. Why it worked: separating mechanisms from coincidence

Interoperability made the network more useful

In a closed loop, both sides coordinate on a provider. With interoperability, each can choose an app matching their language, trust, features or reliability needs. A new app can attract customers without first acquiring every merchant they visit. This is the mechanism described in the IMF research. [S4]

The evidence goes beyond before-and-after transaction totals. Researchers studied granular UPI transactions and two adoption episodes. After demonetisation, closed-loop and UPI activity initially rose, but UPI continued growing as cash availability recovered; cross-app activity was important to the difference. In the integration episode, payments grew faster in districts that gained more connections when the incumbent joined UPI. [S4, adoption-analysis section]

These comparisons support the interpretation that connecting networks aided adoption. They do not isolate every UPI feature or establish an effect size for a smaller country with existing interoperable rails. The cash-shock comparison can reflect other product differences. The district analysis tests the mechanism more closely, but cross-country validity remains a judgement.

Separating accounts from apps supported choice

Customers could start with a trusted bank interface and switch apps without requiring counterparties to switch. This reduced an entry barrier. IMF evidence finds usage moving toward apps with better measured reliability. It supports quality competition, not the claim that every popular app was best for every user. [S4]

Acceptance and pricing reduced immediate friction

QR payments enabled acceptance without the conventional card-terminal model. Zero MDR removed a specified merchant charge, while government support redistributed operating costs. These are documented features, but their separate causal contributions to total growth are not established here. [S5]

Foundations made access feasible

An interoperable API cannot help someone lacking an account, connectivity or an understandable interface. IMF identifies banking inclusion, identification and affordable data as enabling conditions. Sri Lanka's task is to diagnose local barriers, not assume it must reproduce India's identity system or telecom history. [S4]

5. Costs, failures and transfer limits

Free at checkout is not free to operate

For FY2024-25, India approved an estimated INR1,500 crore outlay, equivalent to INR15 billion, for eligible low-value BHIM-UPI merchant transactions. Small-merchant payments up to INR2,000 attracted a 0.15% incentive. Larger transactions had zero MDR but no incentive under this scheme; large merchants did not qualify for the incentive. These are scheme terms, not final expenditure. [S5, 24 March 2025]

Part of reimbursement depended on performance: 10% of admitted claims required an acquiring-bank technical decline rate below 0.75%; another 10% required uptime above 99.5%. These are incentive thresholds, not observed network reliability. [S5]

Sri Lanka should not assume permanent zero MDR funds itself. Switching, integration, support, fraud control and recovery need a funding source. Whether bounded incentives outperform lower fees or better merchant support is a local empirical question.

Open rails can still have concentrated apps

The IMF's June 2025 note reports that the largest three apps facilitated more than 95% of payer-side transactions in its analysed mature-period data. This is not a live October 2026 market-share estimate. Technical openness and competitive distribution are separate issues: branding, bundled services and established relationships can still favour large providers. [S4, Figure 10 discussion]

Sri Lanka should check neutral acceptance and switching in actual app behaviour. A standard is insufficient if onboarding or payment prompts steer users to one provider.

Fraud persisted

India's Ministry of Finance reported 12.64 lakh domestic UPI fraud incidents in FY2024-25, equivalent to 1.264 million reported incidents, involving INR981 crore, equivalent to INR9.81 billion. FY2023-24 recorded 13.42 lakh incidents and INR1,087 crore involved. [S7, Annex I]

"Amount involved" is not net customer loss. Reported incidents are not total prevalence. The annual decline does not show that specific controls caused it. No fraud rate is calculated here: reporting categories and denominators require reconciliation first.

The official response included device binding, PIN authentication, limits, fraud monitoring and reporting channels. Authentication alone does not end the consumer-protection task. [S7]

Do not copy the cash shock

Demonetisation helped researchers observe adoption choices. It does not follow that forcing people away from cash is desirable. Sri Lanka can test merchant activation without a national cash disruption. Essential services should retain workable alternatives until access and redress are reliable. This is a policy recommendation, not an estimated Indian outcome.

6. What Sri Lanka can take

Begin with the existing rails

CBSL records that CEFTS began in August 2015, JustPay in 2017, and the national QR specification was issued in 2018. JustPay connects accounts to enabled apps over CEFTS. LANKAQR supports real-time merchant transfers; off-us payments settle through CEFTS. [S8, sections 3.7, 3.9-3.10 and chronology]

Sri Lanka should therefore not begin by assuming it lacks UPI-like building blocks. It should ask which parts of account access, acceptance, pricing, settlement visibility and protection fail in practice.

Exhibit B. Sri Lanka's usage puzzle

Indicator	CY2024	CY2025	Interpretation
CEFTS volume	202.570 million transactions	260.106 million transactions	Fast-rail activity expanded; includes several mechanisms, not QR alone. [S8, Table 18]
JustPay volume	28.5567 million transactions	28.4791 million transactions	Little volume growth; includes payments and wallet top-ups. [S8, Table 21]
Domestic-app LANKAQR volume	1.184 million transactions	1.150 million transactions	Domestic QR usage fell despite increased registrations. 2025 provisional. [S8, Table 22]
Domestic-app LANKAQR value	LKR5.295 billion	LKR4.797 billion	Nominal values, not inflation-adjusted. 2025 provisional. [S8, Table 22]
Registered LANKAQR merchants, year-end	420,763	460,990	Registrations, not verified active merchants or unique businesses. [S8, Table 23]

Do not add these volumes: JustPay and off-us QR transactions are nested within CEFTS. Tourist payments through internationally linked apps are separate from this domestic QR series. [S8]

Desk diagnostic, not a typical-merchant estimate: 1.150 million domestic QR transactions divided by 460,990 year-end registrations equals approximately 2.5 transactions per registration for the year. The denominator is not average active merchants, registrations occurred at different dates, and international payments are excluded. It flags a measurement and activation question, not an estimate of the typical merchant's activity.

Conditional transfer programme

Take from India	Required condition	Limit or stop rule
Shared network, competing interfaces	Test cross-bank/app linking, acceptance, refunds and recovery end to end	Fix specific barriers before funding a replacement platform
Usage rather than QR distribution as the outcome	Measure active merchants, repeat customers and successful payments	Registrations alone cannot justify scaling
Targeted early support	Establish whether fees, trust, workflow or connectivity constrain use	A subsidy will not necessarily fix unreliable service
Bounded incentives if fees are the barrier	Publish funding, eligibility, audit controls and expiry; compare with non-subsidised or later-entry groups where feasible	Redesign if repeat use vanishes when support ends
Reliability-linked participation	Separate technical failures from business declines and publish comparable definitions	Do not import India's thresholds without local testing
Competition on open rails	Neutral QR acceptance, fair access and scrutiny of steering	App counts are not evidence of effective competition
Protection as infrastructure	Clear recipient confirmation, reporting, dispute routing and responsibility	Do not grow exposure faster than complaints can be handled

CBSL's Q4 2025 bulletin reports maximum domestic LANKAQR MDR of 1%, compared with 1.8% for internationally linked apps. These are ceilings, not actual merchant prices. A subsidy proposal should collect actual fees and merchant economics and verify current rules before implementation. [S8, section 3.10]

A practical first step is a merchant-activation pilot on existing rails, with language-accessible onboarding and clear settlement confirmation. Select contrasting segments rather than only easy urban adopters. Predefine success around retained usage and trustworthy service, not an Indian growth target. This is an analyst proposal, not an existing Sri Lankan programme.

The pilot should separate system activity from incremental retail use, identify domestic merchant payments, and avoid rewarding artificial cycling or self-payments. Measure active merchants and repeat use after introductory support ends. Track technical failures, reversal delays, complaint resolution and fraud amounts using stable definitions. Disclose support paid and the operating costs left with banks or merchants.

No numerical pilot target is proposed: the sources do not establish reliable baselines for active merchants, attempted-payment failures, costs or retention. Establish these before a scale decision. The activation hypothesis could be wrong; detailed evidence might reveal acceptance gaps or account-access barriers requiring infrastructure changes instead.

7. The decision

Sri Lanka can sponsor another national product and reproduce India's visible interface. Or it can test the missing conditions for repeat merchant payments on its existing infrastructure, fixing practical interoperability, reliability, protection and incentives where evidence points.

The second is the stronger starting hypothesis, not a proven answer. India's principal lesson is that connecting users across providers can make payments useful. Sri Lanka's data warn that standards and registration alone may not create a habit.

Before committing to nationwide free pricing or a new platform, policymakers should answer:

1. Which customers and merchants cannot complete cross-provider payments, and why? 2. What explains the gap between registrations and domestic QR use? 3. Who funds service, losses and support after introductory subsidies end? 4. Which evidence justifies scaling, and which result stops the programme?

The case ends at this decision. India's scale is evidence of a successful payments network, not proof that a Sri Lankan copy will succeed.

Source notes

Retrieved 7 October 2026. All numbers use primary sources or labelled desk calculations. Policy announcements establish rules, not causal success. Observation periods and publication dates differ.

[S1] Reserve Bank of India, Annual Report 2016-17, payment systems chapter. UPI/BHIM authorisation, interoperability policy and temporary pricing measures. https://rbi.org.in/Scripts/AnnualReportPublications.aspx?Id=1209

[S2] Reserve Bank of India, Annual Report 2017-18, Table IX.1. Early UPI volume in millions and value in INR billions. https://rbi.org.in/Scripts/AnnualReportPublications.aspx?Id=1236

[S3] Reserve Bank of India, Payment System Report, December 2025, published 18 May 2026. Paragraphs 2.4 and 2.20; recorded-payment definitions, calendar-year activity and average ticket sizes. https://www.rbi.org.in/Scripts/PublicationsView.aspx?id=23813

[S4] IMF, Growing Retail Digital Payments: The Value of Interoperability, Fintech Note 2025/004, June 2025. Original granular NPCI-data analysis, Box 1, Box 2, quality/concentration discussion and adoption comparisons. Research reflects the authors' analysis, not a guarantee of cross-country results. https://www.imf.org/-/media/files/publications/ftn063/2025/english/ftnea2025004.pdf Publication record: https://www.imf.org/en/publications/fintech-notes/issues/2025/06/25/growing-retail-digital-payments-the-value-of-interoperability-567814

[S5] Government of India, Ministry of Finance / PIB, Advancing Cashless India, 24 March 2025. Approved outlay, eligibility, zero-MDR history and performance conditions. Outlay is not actual expenditure. An apparent unit error in a scheme-objective line and third-party global rankings are excluded. https://www.pib.gov.in/PressReleasePage.aspx?PRID=2114335

[S6] World Bank, Global Findex 2021, India Country Brief. Account ownership, payment use and inactivity from the 2021 household survey, not current UPI user counts. https://thedocs.worldbank.org/en/doc/4c4fe6db0fd7a7521a70a39ac518d74b-0050062022/original/Findex2021-India-Country-Brief.pdf

[S7] Government of India, Ministry of Finance, Lok Sabha Question 2481, answered 15 December 2025, Annex I. Reported domestic UPI frauds and security measures. Amount involved is not net loss; only completed-year figures used. https://sansad.in/getFile/lsapps/loksabhaquestions/annex/186/AU2481_5bIzKk.pdf

[S8] CBSL, Payments Bulletin, Fourth Quarter 2025. CEFTS, JustPay and LANKAQR definitions; Tables 18, 21, 22 and 23; MDR ceilings. Domestic QR 2025 activity provisional. Bulletin credits LankaPay and licensed institutions. https://www.cbsl.gov.lk/sites/default/files/Payments_Bulletin_4Q2025_e.pdf