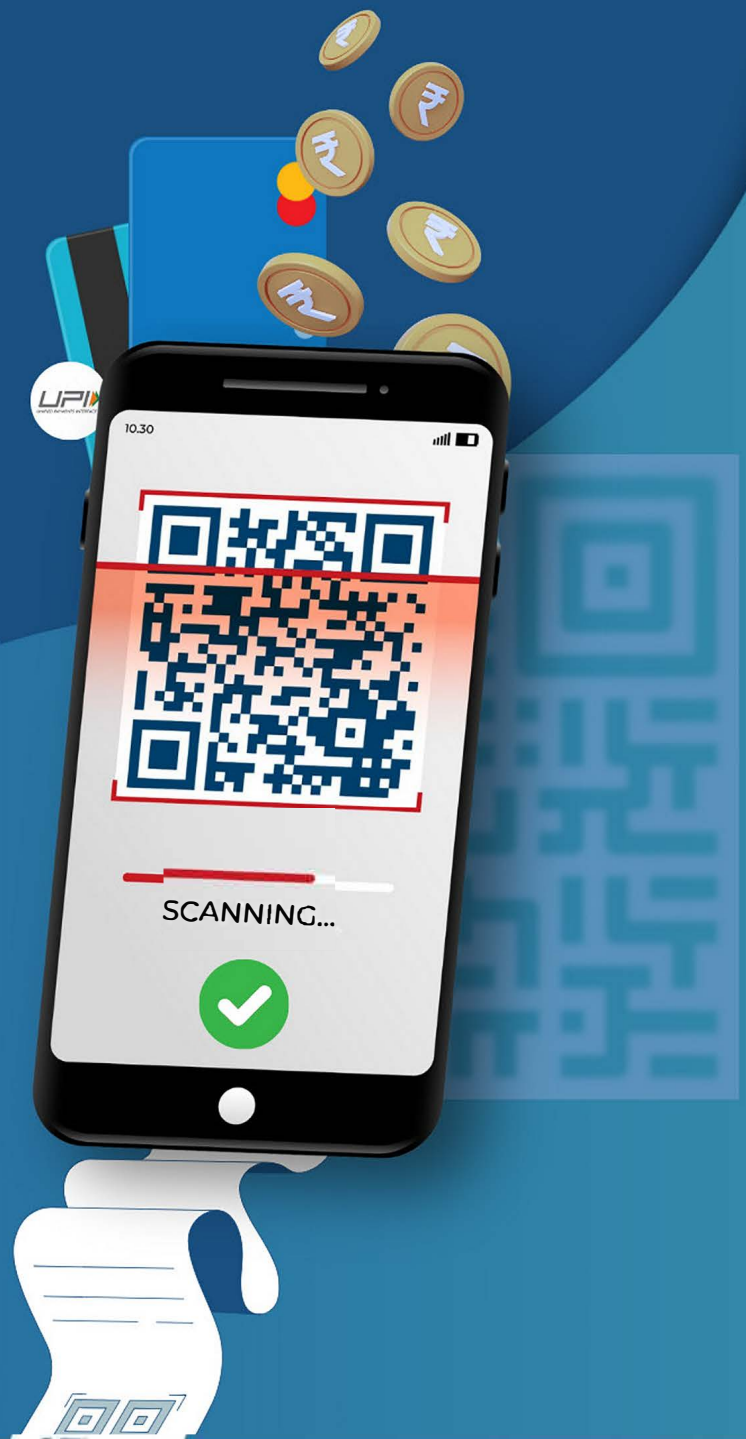


WORKING PAPER

# TAKING UPI GLOBAL

BUILDING AN ECOSYSTEM APPROACH TO EXPORT INDIA'S FLAGSHIP PAYMENT SYSTEM



WORKING PAPER

# Taking UPI Global:

## Building an Ecosystem Approach to Export India's Flagship Payment System

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# EXECUTIVE SUMMARY

*We recognize that safe, secure, trusted, accountable and inclusive digital public infrastructure, respectful of human rights, personal data, privacy and intellectual property rights can foster resilience, and enable service delivery and innovation.*

-G20 New Delhi's Leaders Declaration

One notable highlight from last year's G20 summit, hosted by India, was the widespread acclaim for India's domestic digital public infrastructure. India showcased its digital prowess through India Stack, which includes Aadhar (digital identity), the Data Empowerment and Protection Architecture and Account Aggregator Framework (data exchange) and the centrepiece of India Stack, the United Payment Interface (UPI) for digital payments. The proliferation and penetration of UPI as a mode of payment accepted by a big retail shop to a vegetable seller showed the capability of financial inclusion that can be propelled by an easy-to-use digital payment system.

One of the goals of highlighting UPI during the G20 summit was to inspire other countries to adopt similar payment systems. This would enable India to share its technology and expertise, fostering international collaboration and contributing to the global advancement of digital payment solutions. To date, NPCI International Payment Limited (NIPL), National Payment Corporation of India's (NPCI) international arm, has signed MoUs with partners from 11 jurisdictions across Asia, the Middle East, and Europe, with additional MOUs in progress. The challenge now is scaling India's export of digital public infrastructure (DPI) in the same way UPI scaled the number and volume of digital payments in India.

There are three broad areas of consideration for the export of UPI, i.e. enabling travellers from India to make transactions in other jurisdictions, establishing UPI-like payment ecosystem and lastly, easing the process of remittances between countries and streamlining foreign exchanges. The current method seems to focus on bilateral channels and MoUs with partners in other countries who are willing to accept UPI. This process might be slow and take significant time to

actualise the exports and adoption of UPI in other countries. Establishing multiple bilateral collaborations shall assist India in building a network of fintech entities across the globe. The interoperability offered by UPI through open APIs allows external stakeholders to integrate their operations with financial services, creating an interconnected and comprehensive financial ecosystem.

An ecosystem approach wherein NPCI leverages its partnership with the private sector to export UPI at scale could be the way forward. While the underlying infrastructure mustn't be compromised, NPCI could take help from the private sector as an implementation partner of UPI in other jurisdictions. Through public-private partnerships (PPPs), the private sector can offer financial resources, expertise, and innovative solutions, while governments can supply regulatory frameworks and support to ensure these technologies are utilised ethically and effectively. These collaborations are crucial for maximising the impact and reach of digital public infrastructure (DPI). A concerted effort among key stakeholders, including private sector, the government, industry bodies, stakeholder groups, and civil societies, is required to propel India's digital payments journey to the global level.

# 1 | DEMOCRATISING PAYMENTS: INDIA'S DIGITAL PUBLIC INFRASTRUCTURE

India has made significant strides in expanding the reach of its financial system in recent years, largely due to the rise of DPI within the payments ecosystem. DPI serves as a foundational element for developing user-friendly digital products and customised services. By promoting open APIs, DPI facilitates interoperability between digital services and platforms, driving innovation.

India Stack, the country's primary DPI initiative, comprises a set of open APIs that empower governments, businesses, and developers to use these interfaces and digital resources to create innovative financial products and services. This open architecture fosters a vibrant financial technology (fintech) ecosystem where both startups and established companies can collaborate to develop solutions that cater to the diverse needs of the Indian population, ultimately advancing financial inclusion across the country.

DPIs consist of three critical layers, that form the foundation for various government and private services:

- **Identity Layer:** This layer enables unique identification of individuals, businesses and government entities, ensuring seamless service delivery with biometric authentication for added security. A unique identity grants formal access to those previously excluded from the financial system. Aadhaar, which is a digital identity (a subset of identity), forms the foundational layer of the identity pillar of DPIs.<sup>1</sup>
- **Payments Layer:** Building on the security provided by the identity layer, the payments layer facilitates secure and convenient transactions between individuals, businesses, and government entities using digital methods. This layer promotes a

cashless economy and enhances financial inclusion. Its interoperable nature allows innovation to integrate smoothly with existing infrastructure. The UPI represents the payments layer of India's DPI.<sup>2</sup>

- **Data Layer:** The identity and payments layers operate using an API-based model, driving the growth of innovative real-time digital payments in India. The data layer is represented by the Data Empowerment and Protection Architecture (DEPA)<sup>3</sup>, a joint public-private initiative outlined in a techno-legal document released by NITI Aayog. DEPA gives users control over their data and fosters an ecosystem based on trust and consent-based exchange.<sup>4</sup>

The three layers of India Stack serve as a critical infrastructure for digital public goods such as India's flagship digital payment solution, UPI. DPIs, in contrast to proprietary solutions, are built on principles of open-source, encouraging innovations with shared benefits and prevention of network effect aggregation. UPI has embodied these principles and has served as a catalyst towards financial inclusion in India. This impact is evident in India, where the growth of the Financial Index (FI Index) of the RBI has mirrored the rise in UPI payments following the COVID-19 pandemic. The FI Index increased from 53.9 in 2021 to 56.4% in 2022, 60.1% in 2023, and 64.2% in 2024. This growth corresponds with UPI's expanded penetration in India. From FY 2020 to FY 2024, the volume of UPI transactions has surged ten-fold.<sup>5</sup>

<sup>1</sup> Arain, S. G. (2024, April). *The rise of digital public infrastructure boosts India towards an \$8T GDP by 2030*. Biometricupdate.com. <https://www.biometricupdate.com/202404/the-rise-of-digital-public-infrastructure-boosts-india-towards-an-8t-gdp-by-2030>.

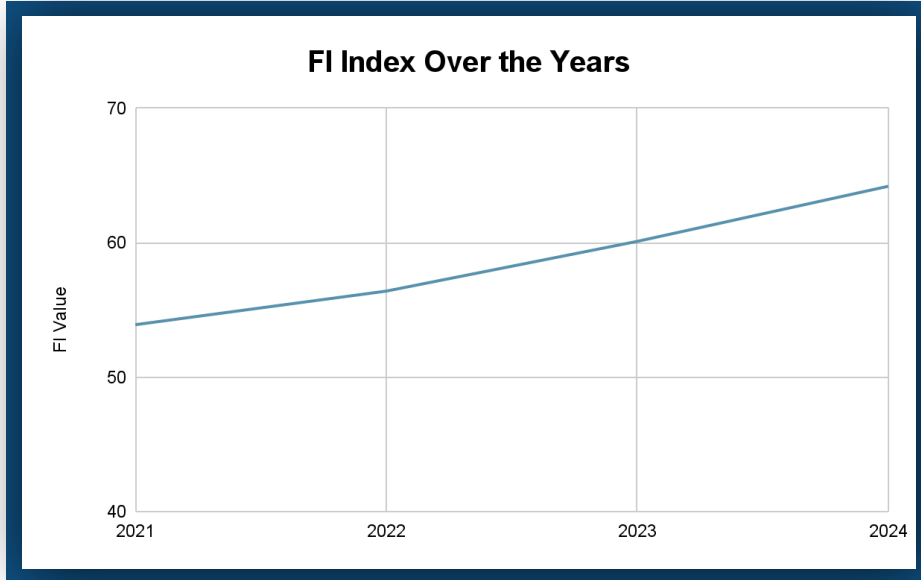
<sup>2</sup> Little, D. A. (n.d.). *Digital Public Infrastructure of India - Accelerating India's Digital Inclusion*. Nasscom. <https://nasscom.in/knowledge-center/publications/nasscom-arthur-d-little-indias-digital-public-infrastructure>.

<sup>3</sup> Roy, A. (2020, August). *Data Empowerment And Protection Architecture: A Secure Consent-Based Data Sharing Framework To Accelerate Financial Inclusion*. Niti Aayog. <https://www.niti.gov.in/sites/default/files/2023-03/Data-Empowerment-and-Protection-Architecture-A-Secure-Consent-Based.pdf>.

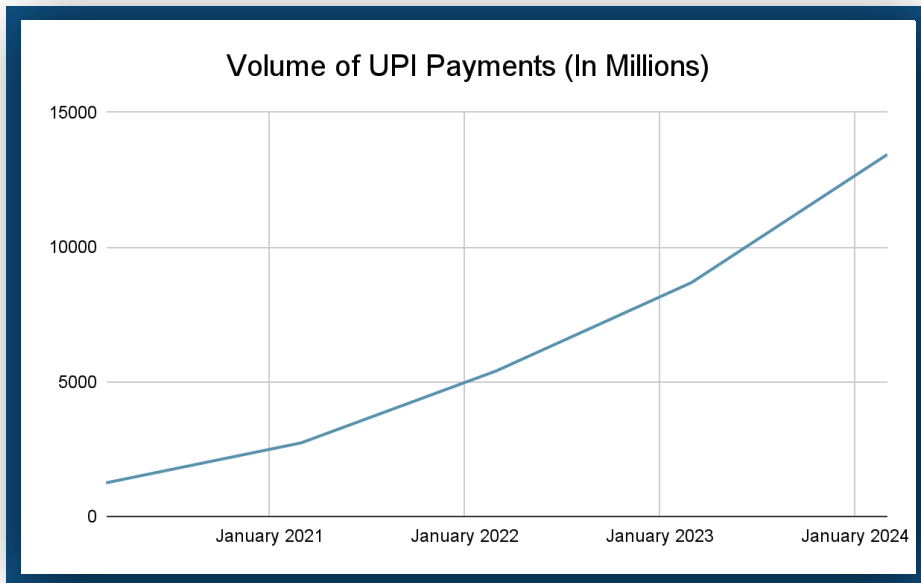
<sup>4</sup> Kathuria, V. (2021, August). *Data Empowerment and Protection Architecture: Concept and Assessment*. Observer Research Foundation. <https://www.orfonline.org/research/data-empowerment-and-protection-architecture-concept-and-assessment>.

<sup>5</sup> National Payments Corporation of India (NPCI). (n.d.). UPI Product Statistics. <https://www.npci.org.in/what-we-do/upi/product-statistics>.

**Fig 1: FI Index Over the Years<sup>6</sup>**



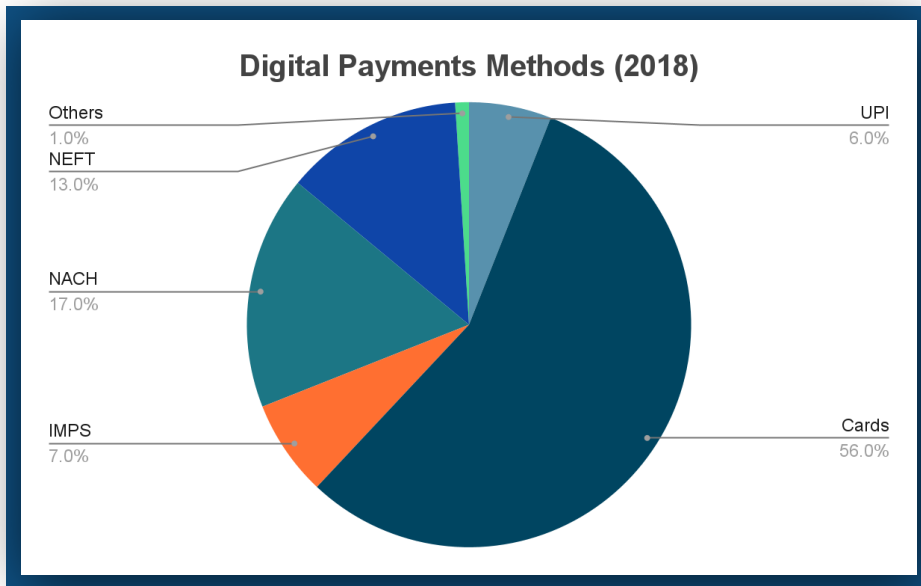
**Fig 2: Volume of UPI Payment in India**



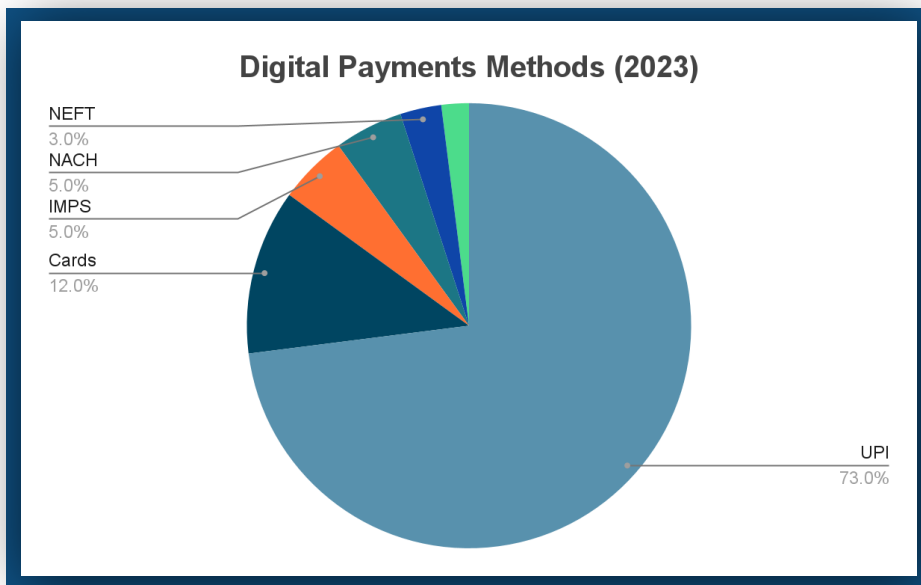
<sup>6</sup>Sharma, S. (2024, July). India's progress towards complete financial inclusion: RBI. ETBFSI. <https://bfsi.economicstimes.indiatimes.com/news/policy/financial-inclusion-index-reaches-64-2-indias-progress-towards-complete-financial-inclusion-rbi/111611418>.

A juxtaposition of digital payments data from 2018 and 2023 reveals a significant increase in both the volume of digital payments and the share of UPI within that volume.

**Fig 3: Digital Payments Methods (2018)<sup>7</sup>**



**Fig 4: Digital Payments Methods (2023)<sup>8</sup>**



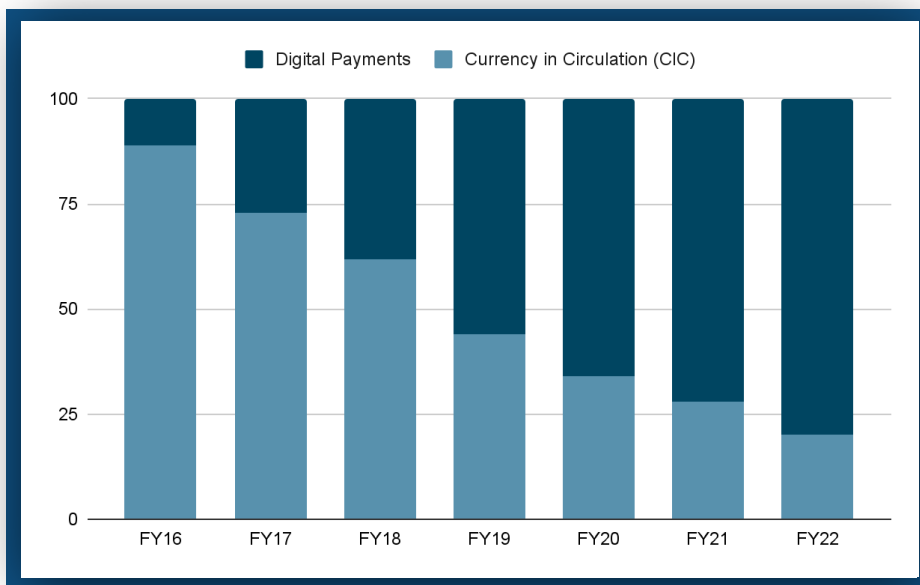
<sup>7</sup> Unified Payments Interface (UPI): A payment solution designed to transform economies of the 21st century. (2023, December 23). National Payment Corporation of India (NPCI). [https://www.npci.org.in/PDF/npci/knowledge-center/partner-whitepapers/Unified-Payments-Interface-\(UPI\)-A-payment-solution-designed-to-transform-economies-of-the-21st-Century.pdf](https://www.npci.org.in/PDF/npci/knowledge-center/partner-whitepapers/Unified-Payments-Interface-(UPI)-A-payment-solution-designed-to-transform-economies-of-the-21st-Century.pdf).

<sup>8</sup> Unified Payments Interface (UPI): A payment solution designed to transform economies of the 21st century. (2023, December 23). National Payment Corporation of India (NPCI). [https://www.npci.org.in/PDF/npci/knowledge-center/partner-whitepapers/Unified-Payments-Interface-\(UPI\)-A-payment-solution-designed-to-transform-economies-of-the-21st-Century.pdf](https://www.npci.org.in/PDF/npci/knowledge-center/partner-whitepapers/Unified-Payments-Interface-(UPI)-A-payment-solution-designed-to-transform-economies-of-the-21st-Century.pdf).



The illustrations above show that UPI has become increasingly dominant in India's digital payments landscape over the past five years. **The growing acceptance of digital infrastructure and the adoption of modern features such as QR codes and NFC have driven India's progress toward a cashless economy.** Additionally, the following data illustrates the rise in digital payments adoption in India and how digital payments have increasingly replaced cash as the primary method of payment in recent years:

**Fig 5: Digital v. Cash Payments<sup>9</sup>**



These statistics highlight the growth of India's domestic payment infrastructure and its benefits to the public, which can also be applied at the international level. As a key digital payment instrument, UPI fosters inclusivity and innovation by leveraging shared resources. This includes a shared QR code infrastructure that allows merchants to store multiple payment addresses within a single code. By operationalising open APIs, UPI establishes a common communication

standard, enabling seamless integration of entities and services within its framework. These open APIs drive innovation by providing third-party application providers (TPAPs) with extensive resources, including toolkits and SDKs, to develop and enhance payment applications.

As of 2023, India recorded 3 crore UPI users and 5 crore merchants accepting UPI payments.<sup>10</sup> In June 2024, the NPCI recorded

<sup>9</sup> Unified Payments Interface (UPI): A payment solution designed to transform economies of the 21st century. (2023, December 23). National Payment Corporation of India (NPCI). [https://www.npci.org.in/PDF/npci/knowledge-center/partner-whitepapers/Unified-Payments-Interface-\(UPI\)-A-payment-solution-designed-to-transform-economies-of-the-21st-Century.pdf](https://www.npci.org.in/PDF/npci/knowledge-center/partner-whitepapers/Unified-Payments-Interface-(UPI)-A-payment-solution-designed-to-transform-economies-of-the-21st-Century.pdf).

<sup>10</sup> PIB, India's UPI : A global front-runner in digital payment systems <https://pib.gov.in/PressReleaseframePage.aspx?PRID=1973082&ref=indiotech.com#:~:text=Today%2C%20more%20than%2040%25%20of,a%20and%20over%205%20crore%20merchants>

approximately 13.42 billion transactions totalling INR 19.47 trillion.<sup>11</sup> This highlights the significant acceptance of UPI not only in India but also in the 11 countries where UPI transactions are accepted.<sup>12</sup> With numerous third parties and banks offering UPI-enabled financial services, the expansion of UPI-enabled digital payment solutions is expected to continue.<sup>13</sup>

While UPI is India's flagship product for global integration, other notable examples of interoperable payment systems in India include the Bharat Bill Payments System for bill payments, the Aadhaar Payment Bridge for G2P direct benefit transfers, the FasTag toll collection system for toll payments, and the Aadhaar Enabled Payments System for biometric cash deposits and withdrawals.<sup>14</sup> Notably, among the 166 governments that initiated cash-transfer programs during the pandemic, those with some form of digital public infrastructure (DPI) reached an average of 51% of their populations, whereas those without DPI reached only 16%.<sup>15</sup>

India's development of interoperable payments systems for various use cases stands as a stellar example for the world to follow. The democratisation of payments systems through UPI, including its application in providing government benefits, and simplifying citizens' lives, offers valuable lessons, particularly for other jurisdictions in the Global South.

A key next step in advancing UPI and fulfilling the G20 commitment is to promote the global adoption of DPI. India has already signed MoUs with partners in 11 jurisdictions to operationalise and accept UPI payments (Refer to Annexure I). To achieve the goal of establishing a globally interoperable payments infrastructure and supporting financial globalisation, India must address several challenges to implement UPI infrastructure abroad. Further, these MoUs are currently the primary channel for exporting UPI abroad. However, by adopting an ecosystem approach, the government can empower the participants, including private players, to facilitate the broader export of UPI. Operationalising strategic partnerships will help build a seamless remittance network and facilitate knowledge sharing among participating entities through MOUs. The next chapter shall discuss this process in detail.

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<sup>11</sup> Ojha, S. (2023, November). 'Up, up, and growing!' UPI transactions at an all-time high in October. What has made this growth sustainable? Mint.

<https://www.livemint.com/money/personal-finance/up-up-and-growing-upi-transactions-at-an-all-time-high-in-october-what-has-made-this-growth-sustainable-11698911883880.html>.

<sup>12</sup> Global acceptance of India's Unified Payment Interface. (n.d.). India Briefing. <https://www.india-briefing.com/news/global-acceptance-of-india-unified-payments-interface-upi-tracker-26183.html/>

<sup>13</sup> National Payments Corporation of India. (n.d.). UPI 3rd Party Apps. <https://www.npci.org.in/what-we-do/upi/3rd-party-apps>

<sup>14</sup> Report of India's G20 Task Force on Digital Public Infrastructure, G20

<sup>15</sup> Chakravorti, B., (2023, May), The case for Investing in the Digital Public Infrastructure, Harvard Business Review <https://hbr.org/2023/05/the-case-for-investing-in-digital-public-infrastructure>

## 2 | A GLOBAL VISION: UNIVERSAL ADOPTION OF INDIA'S DPIS

UPI stands out as India's most prominent DPI offering, with the potential to enhance financial globalisation and contribute to global financial stability.<sup>16</sup> An integrated global financial ecosystem could lower the cost of capital transfers between countries. Currently, capital controls increase costs for smaller firms. For example, a Forbes study on firms in Chile showed that capital transfer costs for smaller firms were higher under capital controls<sup>17</sup> regimes compared to after their removal.<sup>18</sup> A seamless financial global ecosystem could also enable common risk-sharing mechanisms, reduce financial constraints through greater openness, and enhance the resilience of both domestic and global financial institutions.<sup>19</sup>

During the G20 presidency, India showcased the India Stack and promoted the idea of incorporating DPI into global, regional, and domestic policy agenda.<sup>20</sup> Within nine months, from December 2022 to August 2023, the G20 member states accepted a framework for DPI.<sup>21</sup> The Digital Economy Working Group (DEWG) focussed on integrating DPI into broader digital economy discussions, while the Global Partnership for

Financial Inclusion (GPIFI) under the Finance Track emphasised DPI's role in financial inclusion. Both groups reached a consensus on the principles for building DPI, integrating technology, governance, and community roles on a multilateral level. This framework underscores the importance of a collaborative approach to digital infrastructure that fosters inclusivity and efficiency. There is growing consensus among G20 and other countries on the potential of DPI to drive global development outcomes.

In November 2023, Hon'ble Prime Minister Narendra Modi announced the launch of the Global Digital Public Infrastructure Repository (GDPIR) and the Social Impact Fund (SIF) at the Virtual G20 Leaders' Summit.<sup>22</sup> The GDPIR will serve as a database of intellectual resources that guide the design, development, and deployment of DPIS across all G20 members.<sup>23</sup> The SIF is a government-led, multi-stakeholder platform that provides financial support as well as technical and non-technical assistance for establishing DPIS in the Global South.<sup>24</sup> India's commitment to expanding the use of DPIS is evident in its efforts to collaborate with

<sup>16</sup> Giraldo C., Giraldo I., Gomez-Gonzalez J. & Uribe J.M. (2024, January). *Integration and Financial Stability: A Post-Global Crisis Assessment*. (Working Paper).

[https://flar.com/wp-content/uploads/2024/01/Paper\\_Integration-and-Financial-Stability\\_A-Post-Global-Crisis-Assessment.pdf](https://flar.com/wp-content/uploads/2024/01/Paper_Integration-and-Financial-Stability_A-Post-Global-Crisis-Assessment.pdf).

<sup>17</sup> Capital controls are policy and regulatory levers applied by Government and regulatory authorities to control the balance of capital inflow and outflow of the country. This could be to reduce upward pressure on exchange rates and preserve a quantum of financial independence. See more at <https://www.sciencedirect.com/topics/economics-econometrics-and-finance/capital-controls>

<sup>18</sup> Forbes, K. J. (2007). One cost of the Chilean capital controls: Increased financial constraints for smaller traded firms. *Journal of International Economics*, 71(2), 294-323. <https://doi.org/10.1016/j.jinteco.2006.02.003>.

<sup>19</sup> Evans, M. D., & Hnatkovska, V. V. (2007). Financial integration, macroeconomic volatility, and welfare. *Journal of the European Economic Association*, 5(2-3), 500-508. <https://doi.org/10.1162/JEEA.2007.5.2-3.500>.

<sup>20</sup> Diepeveen, S., Long, C., Gates, N. (2024, February). The G20 presidency and the future of the Digital Public Infrastructure agenda: From India to Brazil and beyond. ODI.

<https://odi.org/en/insights/from-india-to-brazil-and-beyond/#:~:text=Looking%20back%3A%20DPI%20and%20India%27s%20G20%20Presidenc&text=Nevertheless%2C%20India%20has%20been%20at,bring%20attention%20to%20DPI%20globally>.

<sup>21</sup> Chaudhuri, R. (2023, Septembet). Decoding the G20 Consensus on Digital Public Infrastructure: A Key Outcome of India's Presidency. CARNEGIE INDIA.

<https://carnegieendowment.org/research/2023/09/decoding-the-g20-consensus-on-digital-public-infrastructure-a-key-outcome-of-indias-presidency?lang=en>.

<sup>22</sup> Prime Minister announces completion of Global Digital Public Infrastructure Repository and creation of a Social Impact Fund to advance Digital Public Infrastructure in Global South. (2023, November). Ministry of Electronics & IT. Government of India.

<https://pib.gov.in/PressReleaseframePage.aspx?PRID=1979113#:~:text=Prime%20Minister%20Shri%20Narendra%20Modi,during%20the%20Virtual%20G20%20Leaders%27>.

<sup>23</sup> Global DPI Repository (GDPIR). Repository of resources that inform practices for designing, building, and deploying DPIS from all G20 members. <https://www.dpi.global/>.

<sup>24</sup> Prime Minister announces completion of Global Digital Public Infrastructure Repository and creation of a Social Impact Fund to advance Digital Public Infrastructure in Global South. (2023, November). Ministry of Electronics & IT. Government of India.

<https://pib.gov.in/PressReleaseframePage.aspx?PRID=1979113#:~:text=Prime%20Minister%20Shri%20Narendra%20Modi,during%20the%20Virtual%20G20%20Leaders%27>.

other nations, offering protocols, source codes, and expertise to foster an inclusive global financial ecosystem.<sup>25</sup>

Countries such as France, Brazil, the UK, Thailand, the Philippines, Ghana, Bangladesh, and Singapore have implemented DPI-based payment infrastructure to create seamless and interoperable digital systems.<sup>26</sup> **India can benefit from studying these examples and should consider collaborating with regulators, financial institutions, and fintech firms to develop advanced payment solutions.** This approach could help India lower remittance costs and establish a globally interoperable payments system. Some notable DPI implementations from countries like Singapore and Brazil include:

## 2.1 SINGAPORE

Singpass, introduced in 2003, initially provided citizens with online access to various government services. By 2017, Singpass had evolved into the identity layer of Singapore's payment DPI. It enables authentication, digital signing, biometric verification for Singaporean citizens, allowing them to make digital transactions through both private and government channels. Integrated with key government service delivery channels, Singpass ensures seamless payments and implements cryptographic techniques for security.<sup>27</sup>

The data layer of Singapore's payment DPI is represented by the Singapore Financial Data Exchange (SGFinDex). SGFinDex uses Singpass and a central consent mechanism to present financial data to citizens, helping them understand their financial health better. Complementing SGFinDex, the free financial-planning service MyMoney assists citizens in making informed financial decisions at various life stages.<sup>28</sup>

In 2021, PayNow established a linkage with

Thailand-based fintech company PromptPay, enabling users in both countries with accounts at participating banks to transfer money in real-time. This transfer requires only the recipient's mobile number and does not involve sharing bank account details. The linkage adhered with anti-money laundering (AML) and countering financing of terrorism (CFT) regulations in both countries. Designed to be scalable, this linkage aims to extend beyond remittances. In Thailand, collaboration between the Thai Bankers' Association (TBA) and the Bank of Thailand (BOT) facilitated project governance, with banks contributing expertise and managing escalation processes, underscoring the role of banking associations in exporting payment DPI solutions.<sup>29</sup>

In 2023, India and Singapore connected their digital payments systems, PayNow and UPI. Central banks, including Liquid Group, Axis Bank and State Bank of India, were involved in these collaboration efforts. Users from either country can now send or receive money in real-time using mobile numbers or Virtual Payment Address (VPA).<sup>30</sup> That same year, PayNow also partnered with Malaysian fintech company DuitNow, to enable real-time, low-cost cross-border payments between users in both countries.<sup>31</sup> This collaboration streamlined fund transfers, allowing transactions using only the recipient's mobile number. Currently, participating banks include Liquid Group, Maybank Singapore Limited, OCBC, and United Overseas Bank from Singapore and CIMB Bank Berhad, Malayan Banking Berhad and Touch 'n Go Digital from Malaysia.<sup>32</sup>

Singapore's efforts to form strategic partnerships with fintech entities from other nations align with its goal to enhance its reputation as an international financial centre.<sup>33</sup> Additionally, Singapore also encourages the efficient gathering and sharing of information among members in the global financial ecosystem.

<sup>25</sup> Sharan, A. (2023, November). India's digital leap in financial inclusion. OMFIF.

<https://www.omfif.org/2023/11/indias-digital-leap-in-financial-inclusion/>.

<sup>26</sup> Report of the G20 task force on Digital Public Infrastructure (July 2024)

<https://dea.gov.in/sites/default/files/Report%20of%20Indias%20G20%20Task%20Force%20On%20Digital%20Public%20Infrastructure.pdf>

<sup>27</sup> Alper, O. P. A., Galicia Rabadan, G. A., Marin Espinosa, A. G., Natarajan, H., Piveteau, T. Y., Ramteke, N. C., & Sarkar, A. (2023). G20 policy recommendations for advancing financial inclusion and productivity gains through digital public infrastructure (Report No. 184963). World Bank. <https://doi.org/10.1596/184963>.

<sup>28</sup> Singapore Government. (n.d.). MyMoneySense. <https://www.mymoneysense.gov.sg/>.

<sup>29</sup> PayNow-PromptPay/PromptPay-PayNow Linkage White Paper. (2022, April). Baker McKenzie.

[https://abs.org.sg/docs/library/PayNow-PromptPay\\_Linkage\\_White\\_Paper.pdf?sfvrsn=9](https://abs.org.sg/docs/library/PayNow-PromptPay_Linkage_White_Paper.pdf?sfvrsn=9).

<sup>30</sup> National Payments Corporation of India. (n.d.). UPI PayNow.

<https://www.npci.org.in/who-we-are/group-companies/npci-international/upi-paynow>.

<sup>31</sup> PayNow-DuitNow Linkage – Fact Sheet. (2023, July). PayNow. <https://www.abs.org.sg/docs/library/pndn-factsheet.pdf>.

<sup>32</sup> Singapore PayNow - Malaysia DuitNow FAQ. (2023, November). PayNow. <https://www.abs.org.sg/docs/library/paynow-duitnow-faq.pdf>.

<sup>33</sup> The Association of Banks in Singapore. (n.d.). About Us. <https://www.abs.org.sg/about-us/vision>.

## 2.2 BRAZIL

Pix, developed by Brazil's central bank, Banco Central do Brasil (BCB), was launched in 2020. It allows individuals, companies, and government entities to send and receive payments instantly and at low cost. Users must register a Pix alias, typically an email address or mobile number, linked to their transactional account.<sup>34</sup> The platform utilises QR codes for access and enforces database encryption protected by law.<sup>35</sup>

Pix has significantly advanced Brazil's financial inclusion efforts. By December 2023, Pix had 149 million consumers and 15 million businesses using the platform for transactions.<sup>36</sup> It has increasingly replaced card transactions in person-to-business (P2B) scenarios, with 36% of all Pix transactions involving consumers paying businesses for goods and services.<sup>37</sup>

Pix has transformed Brazil's payments landscape and is now focussed on expanding this success internationally. It has partnered with Argentina's KamiPay to enable cross-border transactions between users in Argentina and Brazil. This collaboration allows Argentine merchants to receive payments in reais from Brazilians in Argentina, converting them into pesos or "digital dollars," which tourists by avoiding higher taxes on card transactions and protects Argentine merchants from inflation's impact on their profits.<sup>38</sup>

Fiserv, a US-based fintech company, is emerging as a key player in cross-border payment solutions between Argentina and Brazil. Its subsidiary, Clover, provides Argentine businesses with payment systems that facilitate purchases by Brazilian tourists. Fiserv aims to gain experience in cross-border payment solutions and extend its expertise to countries like the US, Mexico, and Canada. With approximately 38% of Brazil's total remittances coming from the USA, amounting to Brazilian reais (BRL) 24.9 billion, a real-time cross-border payment solution could significantly reduce remittance costs.

Singapore, Brazil and Thailand are the most prominent examples where the critical infrastructure supporting DPI has been actualised to enable inclusive and interoperable digital payment solutions. This is evident by how these solutions have been accepted in other countries, allowing strategic partnerships to be built with them towards the end of creating a cross-border digital payments network. By scaling the capabilities offered by UPI, India has an opportunity to export its DPI solutions to the global south and even developed nations. To advance the global development of DPIs, governments, technology companies, and international organisations must collaborate to create uniform DPI building blocks. Establishing internationally recognised frameworks and standards for DPI components will ensure interoperability and ease of integration.

<sup>34</sup> Banco Central do Brasil. (n.d.). What is Pix?. [https://www.bcb.gov.br/en/financialstability/pix\\_en](https://www.bcb.gov.br/en/financialstability/pix_en).

<sup>35</sup> Alper, O. P. A., Galicia Rabadan, G. A., Marin Espinosa, A. G., Natarajan, H., Piveteau, T. Y., Ramteke, N. C., & Sarkar, A. (2023). G20 policy recommendations for advancing financial inclusion and productivity gains through digital public infrastructure (Report No. 184963). World Bank. <https://doi.org/10.1596/184963>.

<sup>36</sup> Pix by the Numbers. (2024, January). Matera. <https://20392958.fs1.hubspotusercontent-na1.net/hubfs/20392958/Pix%20by%20the%20Numbers%20Q4%202023.pdf>.

<sup>37</sup> Brazil's Pix First Cross-Border Connections. (2024, May 20). Payments and Commerce Market Intelligence. <https://paymentscmi.com/insights/how-brazilians-pay-with-pix-in-argentina-and-uruguay/>.

<sup>38</sup> Brazil's Pix First Cross-Border Connections. (2024, May 20). Payments and Commerce Market Intelligence. <https://paymentscmi.com/insights/how-brazilians-pay-with-pix-in-argentina-and-uruguay/>.

# 3 | NEXT FRONTIER FOR GLOBAL ADOPTION OF UPI: LEVERAGING THE ECOSYSTEM TO TAKE DPI GLOBAL

The G20 task force defines DPI as “an infrastructure-based approach that uses technology to achieve societal goals through an ecosystem (comprising technology, markets and governance) built in the public interest that leverages **competitive private innovation within regulatory guardrails.**”

While DPI serves as the foundation for innovation, private sector innovation is crucial for enhancing its use. The private industry and the UPI stack are interdependent for maintaining the payment ecosystem and advancing financial inclusion. **To scale DPI in other jurisdictions, it is essential to harness the combined efforts of the ecosystem, including regulators and the private sector.**

The private sector has already paved the way for the global adoption of UPI. For instance, Indian fintech company PhonePe has enabled cross-border payments at merchant outlets in the UAE, Singapore, Mauritius, Nepal, and Bhutan.<sup>39</sup> The interoperable nature of the UPI network supports collaboration between third-party application providers (TPAPs) from different countries, fostering payment innovations. For example, PhonePe has partnered with PickMe, Sri Lanka's leading ride-hailing app, to facilitate contactless payments for Indians in Sri Lanka.<sup>40</sup> This highlights the significant potential of integrating Indian TPAPs with international digital ecosystems. Similarly, in January 2024, Google India and NPCI signed an MoU to expand UPI's transformative impact abroad. This initiative aligns with NPCI's goal of strengthening India's position in the global digital payments market.<sup>41</sup>

Such collaborations illustrate the immense potential of integrating the Indian private sector with digital ecosystems abroad. Furthermore, the fintech community from India can offer innovative payment

solutions for merchants abroad, demonstrating that collaborations can extend beyond fintech companies.

There are three key areas to consider for exporting UPI,

- i. **Acceptance of UPI Payments abroad:** Facilitating transactions for Indian travellers in other countries,
- ii. **Building UPI-like Ecosystems:** Developing payment ecosystems similar to UPI in other jurisdictions, and
- iii. **Reducing Remittance Costs:** Lowering remittance costs and streamlining foreign exchange processes between countries.

## 3.1 LEVERAGING THE PRIVATE PLAYERS TO TAKE UPI GLOBAL

The first consideration involves demonstrating UPI's potential for global acceptance. It will highlight UPI's capability to provide real-time payments in cross-border transactions. While India has signed multiple MoUs with payment service providers of other jurisdictions, this process is time consuming and requires multiple channels of negotiations. Rather there is a need to find an additional approach to take UPI globally at scale. This is where the private sector can come into the picture to collaborate with NPCI to take UPI and other DPIs abroad.

The private sector plays a crucial role in building consumer-facing applications that leverage DPI. This is evident in the role of TPAPs in creating various applications on top of UPI. Dozens of TPAPs use open APIs provided by UPI to build customised financial

<sup>39</sup> PhonePe launches support for cross-border UPI payments. (2023, February). The Economic Times.

<https://economictimes.indiatimes.com/nri/invest/phonepe-launches-support-for-cross-border-upi-payments/articleshow/97821018.cms?from=mdr>

<sup>40</sup> PhonePe partners with PickMe to enable contactless payments for Indian travellers in Sri Lanka. (2024, June). PhonePe - Press Release. <https://www.phonepe.com/press/phonepe-partners-with-pickme-to-enable-contactless-payments-for-indian-travellers-in-sri-lanka/#:~:text=Press%20Release-,PhonePe%20partners%20with%20PickMe%20to%20enable%20contactless%20payments%20for%20Indian,Indian%20travellers%20in%20Sri%20Lanka>.

<sup>41</sup> Google Pay India signs MoU with NPCI International for Global Expansion of UPI. (2024, January). National Payments Corporation of India (NPCI).

<https://www.thehindu.com/sci-tech/technology/google-pay-india-signs-mou-with-npci-international-to-expand-upi-to-countries-beyond-india/article67748073.ece>.

<sup>42</sup> National Payments Corporation of India. (n.d.). UPI 3rd Party Apps. <https://www.npci.org.in/what-we-do/upi/3rd-party-apps>.

solutions, including wealth management tools, investment options and insurance products.<sup>42</sup> With 29 registered TPAPs with NPCI, many of these entities also operate in international markets where they can implement UPI en masse. To effectively deploy UPI in foreign jurisdictions, NPCI must adopt an ecosystem approach, working to gain acceptance among the merchants and payment system providers of those regions.

### 3.2 COLLABORATIVE METHOD TO BUILD DPI IN OTHER COUNTRIES

The second consideration is helping other jurisdictions build digital payment systems on the back of the technology used in UPI. There are two ways in which digital assets can be built in a country. First is a siloed approach that would require building full-stack solutions for every business process individually. The developer is responsible for designing and optimising the necessary components and capabilities. Although this solution leads to digitisation of the system and data, it lacks interoperability, agility, reusability, extendability<sup>43</sup> Second approach is the “creation of shared technology infrastructure”<sup>44</sup> also referred to as DPI wherein different building blocks can be reused and integrated to build digital assets. Both these approaches require significant investments. Since India’s push towards globalising DPI keeps the global south at the forefront<sup>45</sup>, it is essential that it must deploy DPI offerings in modern, cost-effective packages.<sup>46</sup>

Private sector can play a pivotal role in deployment of these technologies in a cost effective manner. The demand for digital services also presents the market opportunity especially in countries where digital infrastructure is weak. There has to be a synergy

between the private sector and public goals to have a successful DPI in any country. Since the private sector is the executor of the public infrastructure ideas especially in the payments space, they also have insights of consumer and market understandings which can help in the implementation of DPIs abroad.<sup>47</sup> There have been multiple initiatives by the private sector across the globe wherein they have helped build infrastructure to create access to services for the public.

Through a collaborative and strategic partnership with the private sector, the government may utilise the resources and insights of the private sector in building the DPIs for other jurisdictions from ground up. While the governments might prefer to work with central banks of other countries to establish a payment system this intricate, however, it can leverage the industry players for collaboration and technology partnerships to provide technical expertise and infrastructure to support the integration of UPI with existing financial systems.

<sup>43</sup> Varma, P. et al. (2024, February). The Future of Digital Public Infrastructure: A Thesis for Rapid Global Adoption. Carnegie India. [https://carnegie-production-assets.s3.amazonaws.com/static/files/The\\_Future\\_of\\_Digital\\_Public\\_Infrastructure\\_-\\_A\\_Thesis\\_for\\_Rapid\\_Global\\_Adoption-1.pdf](https://carnegie-production-assets.s3.amazonaws.com/static/files/The_Future_of_Digital_Public_Infrastructure_-_A_Thesis_for_Rapid_Global_Adoption-1.pdf).

<sup>44</sup> Varma, P. et al. (2024, February). The Future of Digital Public Infrastructure: A Thesis for Rapid Global Adoption. Carnegie India. [https://carnegie-production-assets.s3.amazonaws.com/static/files/The\\_Future\\_of\\_Digital\\_Public\\_Infrastructure\\_-\\_A\\_Thesis\\_for\\_Rapid\\_Global\\_Adoption-1.pdf](https://carnegie-production-assets.s3.amazonaws.com/static/files/The_Future_of_Digital_Public_Infrastructure_-_A_Thesis_for_Rapid_Global_Adoption-1.pdf).

<sup>45</sup> Kundu, R. (2023, November). India ready to share its DPI resources with Global South: Economic Affairs secy. Mint. <https://www.livemint.com/news/india/india-ready-to-share-its-dpi-resources-with-global-south-economic-affairs-secy-11700220956574.html>.

<sup>46</sup> Varma, P. et al. (2024, February). The Future of Digital Public Infrastructure: A Thesis for Rapid Global Adoption. Carnegie India. [https://carnegie-production-assets.s3.amazonaws.com/static/files/The\\_Future\\_of\\_Digital\\_Public\\_Infrastructure\\_-\\_A\\_Thesis\\_for\\_Rapid\\_Global\\_Adoption-1.pdf](https://carnegie-production-assets.s3.amazonaws.com/static/files/The_Future_of_Digital_Public_Infrastructure_-_A_Thesis_for_Rapid_Global_Adoption-1.pdf).

<sup>47</sup> Bandura R. et.al (2024, March) Advancing Digital Transformation and Digital Public Infrastructure: The Role of the Private Sector, Centre for Strategic and International Studies. <https://www.csis.org/analysis/advancing-digital-transformation-and-digital-public-infrastructure-role-private-sector#:~:text=Through%20PPPs%2C%20the%20private%20sector,impact%20and%20reach%20of%20DPI>.

<sup>47</sup> Bandura R. et.al (2024, March) Advancing Digital Transformation and Digital Public Infrastructure: The Role of the Private Sector, Centre for Strategic and International Studies. <https://www.csis.org/analysis/advancing-digital-transformation-and-digital-public-infrastructure-role-private-sector#:~:text=Through%20PPPs%2C%20the%20private%20sector,impact%20and%20reach%20of%20DPI>.

# 4 | CONCLUSION AND WAY FORWARD

The G20 consensus emphasises that DPI governance must build trust within a vibrant and inclusive ecosystem, enabling community-driven value creation. Key pillars of DPI include interoperability, inclusivity, ongoing multi-stakeholder consultation, agile systems and user-centric solutions.<sup>48</sup> India's DPI has pioneered these principles and aims to strengthen them further to support global integration. The government should leverage the private sector's expertise and reach in taking UPI global. Through public-private partnerships (PPPs), the private sector can offer financial resources, expertise, and innovative solutions, while governments can supply regulatory frameworks and support to ensure these technologies are utilised ethically and effectively. These collaborations are crucial for maximising the impact and reach of digital public infrastructure (DPI). Achieving this requires a concerted effort from all key stakeholders, including the private sector, government, industry bodies, stakeholder groups, and civil society, to elevate India's digital payments system to a global level.

India must build on the success of UPI and its foundational elements to ensure continued adoption. To this end, NPCI has announced UPI 2.0 and UPI Chalega 3.0, which includes various new features under the UPI umbrella. The next phase of innovation on the existing DPI to further propel financial inclusion goals is already underway and India's payments DPI holds significant potential to enhance digital payments penetration and address new use cases for increased efficiency and interoperability. India should leverage these advancements to create a sustainable export strategy for UPI to other jurisdictions.

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<sup>36</sup> Burman, A., Rai, S. (2023, September). Financial Inclusion and Digital Transformation in India | Understanding Indian Cities. Carnegie India. <https://carnegieendowment.org/india/ideas-and-institutions/financial-inclusion-and-digital-transformation-in-india-or-understanding-indian-cities?lang=en>.



# ANNEXURE

The expansion of UPI offerings extends beyond domestic borders, as India has signed MoUs with multiple countries and international entities to boost the adoption of UPI-enabled financial services worldwide. For example, in February 2024, India signed several MoUs with the UAE, including one that facilitates collaboration between both countries'

payments DPIS - UPI and AANI. This partnership enables seamless cross-border transactions between the two nations, covering various areas such as DPI projects and the integration of credit and debit cards.

Below is a list of countries with which India has signed MoU related to DPIS:

Year	Country	Partnering Entity	Scope
2021	Bhutan	Royal Monetary Authority (RMA)	Through collaboration between NPCI International Payments Limited (NIPL) and the Royal Monetary Authority, Bhutan became the first country to adopt India's BHIM UPI standards for QR-based payments. <sup>51</sup>
	Malaysia	Merchantrade Asia	NIPL collaborated with Merchantrade Asia to enable real-time remittances to India via UPI. <sup>52</sup>
	UAE	Network International	MoU between Network International and NIPL to discuss the acceptance of UPI in UAE. <sup>53</sup> Acceptance of Rupay cards at PoS terminals also agreed upon.
2022	UAE	NEOPAY, Mashreq Bank	NIPL and NEOPAY collaborated to offer UPI through NEOPAY terminals in the UAE. <sup>54</sup>

<sup>49</sup> Joint Statement: Visit of Prime Minister to the United Arab Emirates. (2024, February). Ministry of External Affairs, Government of India. [https://www.mea.gov.in/bilateral-documents.htm?dtl/37629/Joint\\_Statement\\_Visit\\_of\\_Prime\\_Minister\\_to\\_the\\_United\\_Arab\\_Emirates\\_\\_February\\_1314\\_2024#:~:text=President%20His%20Highness%20Sheikh%20Mohamed,Dubai%20on%20February%2014%2C%202024.](https://www.mea.gov.in/bilateral-documents.htm?dtl/37629/Joint_Statement_Visit_of_Prime_Minister_to_the_United_Arab_Emirates__February_1314_2024#:~:text=President%20His%20Highness%20Sheikh%20Mohamed,Dubai%20on%20February%2014%2C%202024.)

<sup>50</sup> India signs MoU to interlink UPI with UAE's instant payment platform AANI. (2024, February). Times of India. [https://timesofindia.indiatimes.com/business/india-business/india-signs-mou-to-interlink-upi-with-uaes-instant-payment-platform-aani/articleshow/107666002.cms.](https://timesofindia.indiatimes.com/business/india-business/india-signs-mou-to-interlink-upi-with-uaes-instant-payment-platform-aani/articleshow/107666002.cms)

<sup>51</sup> BHIM UPI to foray into Bhutan in collaboration with Royal Monetary Authority (RMA) of Bhutan. (2021, July). National Payments Corporation of India (NPCI).

[https://www.npci.org.in/PDF/npci/press-releases/2021/NPCI-Press-Release-BHIM-UPI-to-foray-into-Bhutan-in-collaboration-with-Royal-Monetary-Authority-RMA-of-Bhutan.pdf.](https://www.npci.org.in/PDF/npci/press-releases/2021/NPCI-Press-Release-BHIM-UPI-to-foray-into-Bhutan-in-collaboration-with-Royal-Monetary-Authority-RMA-of-Bhutan.pdf)

<sup>52</sup> Merchantrade Asia and NPCI International come together to offer real-time remittances to India through the UPI Platform. (2021, August). National Payments Corporation of India (NPCI) and Merchantrade.

[https://www.npci.org.in/PDF/npci/press-releases/2021/NPCI-International-Press-Release-Merchantrade-Asia-and-NPCI-International.pdf.](https://www.npci.org.in/PDF/npci/press-releases/2021/NPCI-International-Press-Release-Merchantrade-Asia-and-NPCI-International.pdf)

<sup>53</sup> Network International and NPCI International sign MoU for upcoming collaboration on acceptance of UPI real-time mobile payment solution in the UAE. (2021, November). National Payments Corporation of India (NPCI) and Network International.

[https://www.npci.org.in/PDF/npci/press-releases/2021/Press-Release-Network-International-and-NIPL-sign-MoU-for-upcoming-collaboration-on-acceptance-of-UPI-real-time-mobile-payment-solution-in-the-UAE.pdf.](https://www.npci.org.in/PDF/npci/press-releases/2021/Press-Release-Network-International-and-NIPL-sign-MoU-for-upcoming-collaboration-on-acceptance-of-UPI-real-time-mobile-payment-solution-in-the-UAE.pdf)

<sup>54</sup> BHIM UPI goes live at NEOPAY terminals in UAE. (2022, April). National Payments Corporation of India (NPCI).

[https://www.npci.org.in/PDF/npci/press-releases/2022/NIPL-Press-Release-BHIM-UPI-goes-live-at-NEOPAY-terminals-in-UAE.pdf.](https://www.npci.org.in/PDF/npci/press-releases/2022/NIPL-Press-Release-BHIM-UPI-goes-live-at-NEOPAY-terminals-in-UAE.pdf)

Year	Country	Partnering Entity	Scope
		LuLu Financial Holdings	NIPL and LuLu Financial Holdings agreed to integrate processes to facilitate remittances to beneficiaries in India through UPI. <sup>55</sup>
	France	Lyra Network	NIPL signed an MoU with France to enable payments using UPI and Rupat at Lyra PoS terminals.
	Nepal	Gateway Payments Service Pvt. Ltd., Manam Infotech Pvt. Ltd.	NIPL collaboration to bolster interoperable P2P and P2M transactions and democratise payments. <sup>56</sup> Nepal became the first country to deploy UPI as the primary payment platform driving the digitisation of cash.
	UK	PayXpert	NIPL signed an MoU with PayXpert for the acceptance of UPI payments at PayXpert terminals in the UK. <sup>57</sup>
		Terrapay	NIPL signed an MoU with Terrapay, to enable cross-border payments using Terrapay's agile infrastructure integrated with the UPI network. <sup>58</sup>
	Oman	Central Bank of Oman (CBO)	NIPL signed an MoU with CBO to enable the acceptance of Rupay cards at all OmanNet network ATMs and PoS terminals. The MoU also supports real-time cross-border remittances using UPI. <sup>59</sup>

<sup>55</sup> LuLu Financial Holdings and NPCI International ink agreement to enable real-time remittances to India on the UPI Platform. (2021, August). AetosWire. <https://aetoswire.com/en/news/lulu-financial-holdings-and-npci-international-ink-agreement-to-enable-real-time-remittances-to-india-on-the-upi-platform>.

<sup>56</sup> NPCI International, Gateway Payment Service, and Manam Infotech join hands to deploy UPI solution in Nepal. (2022, February). National Payments Corporation of India (NPCI). <https://www.npci.org.in/PDF/npci/press-releases/2022/NIPL-Press-Release-Gateway-Payment-Service-and-Manam-Infotech-join-hands-to-deploy-UPI-solution-in-Nepal.pdf>.

<sup>57</sup> India's NPCI International signs PayXpert as UK's first acquirer for UPI and RuPay. (2022, August). National Payments Corporation of India (NPCI). <https://www.npci.org.in/PDF/npci/press-releases/2022/NPCI-Press-Release-India%E2%80%99s-NPCI-International-signs-PayXpert-as-UK%E2%80%99s-first-acquirer-for-UPI-and-RuPay.pdf>.

<sup>58</sup> TerraPay and NPCI International collaborate to drive seamless merchant payments via UPI-enabled QR codes. (2022, September). National Payments Corporation of India (NPCI). <https://www.npci.org.in/PDF/npci/press-releases/2022/NIPL-Press-Release-TerraPay-and-NPCI-International-collaborate-to-drive-seamless-merchant-payments-via-UPI-enabled-QR-codes.pdf>.

<sup>59</sup> Milestone MOU signed for acceptance of RuPay card and UPI QR Code-based mobile payments in Oman. (2022, October). Embassy of India, Muscat. Government of India. [https://www.indemb-oman.gov.in/news\\_letter\\_detail.php?id=244](https://www.indemb-oman.gov.in/news_letter_detail.php?id=244).

Year	Country	Partnering Entity	Scope
2023	UAE	Central Bank of UAE (CBUAE)	NIPL signed two MoUs with CBUAE to establish a framework using local currencies for transactions between the countries. The integration of UAE's Instant Payment Platform (IPP) with UPI for efficient cross-border transactions was also agreed upon. <sup>60</sup>
	Singapore	PayNow	NIPL collaborated with PayNow to facilitate cross-border transactions between the countries using UPI. <sup>61</sup>
	France	Lyra Network	Prime Minister Narendra Modi announced that India and France have collaborated to enable the use of UPI in France, starting in February 2024 with services at the Eiffel Tower. <sup>62</sup>
2024	Sri Lanka	LankaPay	NIPL alliance with LankaPay enabled PhonePe, an Indian fintech TPAP, to process transactions at LankaPay PoS terminals for Indian travellers. <sup>63</sup>
	Mauritius	Bank of Mauritius	NIPL alliance with the Bank of Mauritius allows Indian travellers to pay at merchant PoS in Mauritius using UPI. Similarly, a Mauritian traveller can use UPI in India. Rupay cards are also accepted at PoS terminals in Mauritius. <sup>64</sup>
	Greece	Eurobank	MoU between NIPL and Eurobank facilitating cross-border payments through UPI. <sup>65</sup>

<sup>60</sup> India, UAE sign MoUs for promoting local currencies in cross-border trade. (2023, July). The Economic Times. <https://economictimes.indiatimes.com/industry/banking/finance/banking/rbi-uae-central-bank-agree-to-use-local-currencies-upi-to-be-linked-with-uaes-payment-platform/articleshow/101781374.cms?from=mdr>.

<sup>61</sup> Johny, M. R. (2023, February). Explained: India's UPI, Singapore's PayNow linked. Who will benefit? Hindustan Times. <https://www.hindustantimes.com/business/explained-india-s-upi-singapore-s-paynow-linked-who-will-benefit-101676957866300.html>.

<sup>62</sup> India's UPI launches in France, read PM Modi's congratulatory message. (2024, February). The Times of India. <https://timesofindia.indiatimes.com/gadgets-news/indias-upi-launches-in-france-read-pm-modis-congratulatory-message/articleshow/107381748.cms#:~:text=Prime%20Minister%20Narendra%20Modi%20congratulated,acceptance%20of%20UPI%20in%20France>.

<sup>63</sup> Honorable Prime Minister of India, Honorable Prime Minister of Mauritius and Honorable President of Sri Lanka witnessed the launch of India's RuPay / UPI connectivity with Mauritius and Sri Lanka. (2024, February). Reserve Bank of India - Press Releases. [https://www.rbi.org.in/Scripts/BS\\_PressReleaseDisplay.aspx?prid=57308](https://www.rbi.org.in/Scripts/BS_PressReleaseDisplay.aspx?prid=57308).

<sup>64</sup> Hon'ble Prime Minister of India, Hon'ble Prime Minister of Mauritius and Hon'ble President of Sri Lanka witnessed the launch of India's RuPay / UPI connectivity with Mauritius and Sri Lanka. (2024, February). Reserve Bank of India - Press Releases. [https://www.rbi.org.in/Scripts/BS\\_PressReleaseDisplay.aspx?prid=57308](https://www.rbi.org.in/Scripts/BS_PressReleaseDisplay.aspx?prid=57308).

<sup>65</sup> MoU signed with Greek bank to facilitate remittances to India using UPI. (2024, February). The Economic Times. <https://economictimes.indiatimes.com/industry/banking/finance/mou-signed-with-greek-bank-to-facilitate-remittances-to-india-using-upi/articleshow/108099039.cms?from=mdr>.

Year	Country	Partnering Entity	Scope
2023	UAE	Central Bank of UAE (CBUAE)	Agreement to link both countries' national payment platforms, UPI and AANI, to facilitate cross-border transactions. This initiative is based on the MoU signed in 2023. <sup>66</sup>

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<sup>66</sup> India signs MoU to interlink UPI with UAE's instant payment platform AANI. (2024, February). Times of India. <https://timesofindia.indiatimes.com/business/india-business/india-signs-mou-to-interlink-upi-with-uaes-instant-payment-platform-aani/articleshow/107666002.cms>

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