Smart devices to be next bastion for UPI

NPCI builds Internet of Things rails as UPI targets 10x growth

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India's real-time payments system, the Unified Payments Interface (UPI), is getting a smart upgrade. The National Payments Corporation of India (NPCI) is developing an Internet of Things (IoT)-ready version of UPI that will allow automated payments through smart appliances, wearables, connected vehicles, and more, according to two sources in the know.

With this upgrade, smart devices — like refrigerators, washing machines, connected cars, and even smartwatches — could initiate UPI payments on their own. Think of parking fees paid directly from your car, metro tickets via a wearable, or a subscription renewed automatically through your smart TV — all without opening a banking or third-party UPI app.

What sets the new system apart is its ability to transact across gadgets. Currently, all UPI transactions must be executed through a mobile phone. The upcoming feature will allow devices to process payments using a separate virtual payment address tied to the user's primary UPI ID. This opens the door for embedded transactions on smart devices, powered by delegated payments via UPI Circle.

"Giving a transaction mandate to a person and to a device is operationally different but fundamentally similar. There's some nuance involved in this feature compared to others, since devices will have separate IDs," said a person familiar with the matter.

The feature is part of NPCI's annual innovation pipeline. Devices will be able to execute UPI transactions autonomously whenever a user-issued mandate is active. The onboarding process may include one-time password-based authentication.

Smart moves

- UPI for IoT to automate payments across smart devices
- Devices to get their own UPI IDs, linked to a user's primary account
- Built on UPI Circle (delegated payments) and AutoPay features
- Part of NPCI's 2025 innovation road map
- Rollout likely at Global Fintech Fest, subject to approvals

"There was discussion around how to build the common library, and how to capture the mobile personal identification number, since there could be payment risks. The previous launch of delegated payments can now be leveraged, and the feature can be tested safely," a second source said.

UPI Circle allows users to authorise payments from their UPI account to a secondary user with set limits. "The device will get another UPI ID. Delegated payments and AutoPay will support it. It'll use these features to initiate transactions under defined limits. Any changes to the mandate can be made through the same app from which the debit request was initiated," one of the sources added.

An email sent to NPCI did not receive a response until the time of going to press.

The feature may also tap into UPI AutoPay for recurring transactions — ideal for subscriptions and other repeat payments.

These devices would initiate specific UPI transactions without needing a fresh user command each time, using UPI rails to process payments securely. NPCI is working to introduce this IoT-ready UPI at the 2025 edition of the Global Fintech Fest, pending regulatory approvals.

In 2024, NPCI launched UPI Circle and Bharat BillPay for business-to-business platforms. In 2023, it rolled out features like credit line on UPI, UPI Lite X for offline payments, and conversational payments.

The expansion into newer use cases comes as UPI clocked 18.4 billion transactions in June. NPCI has publicly stated its target of growing UPI tenfold from current levels.

In a previous interview with *Business Standard*, NPCI Managing Director and Chief Executive Officer Dilip Asbe said the organisation's primary focus was on scaling UPI, which he believes has the potential to reach over 1 billion monthly users — up from the current 450 million.

According to the Reserve Bank of India's annual report for 2024-25 (FY25), UPI recorded 185.8 billion transactions during the year — a 41.7 per cent jump from 131.1 billion in 2023-24 (FY24). Its share in total payment volumes rose to 83.4 per cent in FY25 from 79.4 per cent in FY24.