The future of real-time payments is B2B

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Real-time payments (RTP) systems are scaling rapidly

The global RTP market is currently valued at
US$17b
and is expected to reach
US$193b by 2030
growing at a CAGR of
35%
from 2022 to 2031.

Approximately 80 countries worldwide provide RTP or are planning to launch RTP systems in the near future. To keep up with the demands of the global economy, countries worldwide are investing in RTP capabilities.

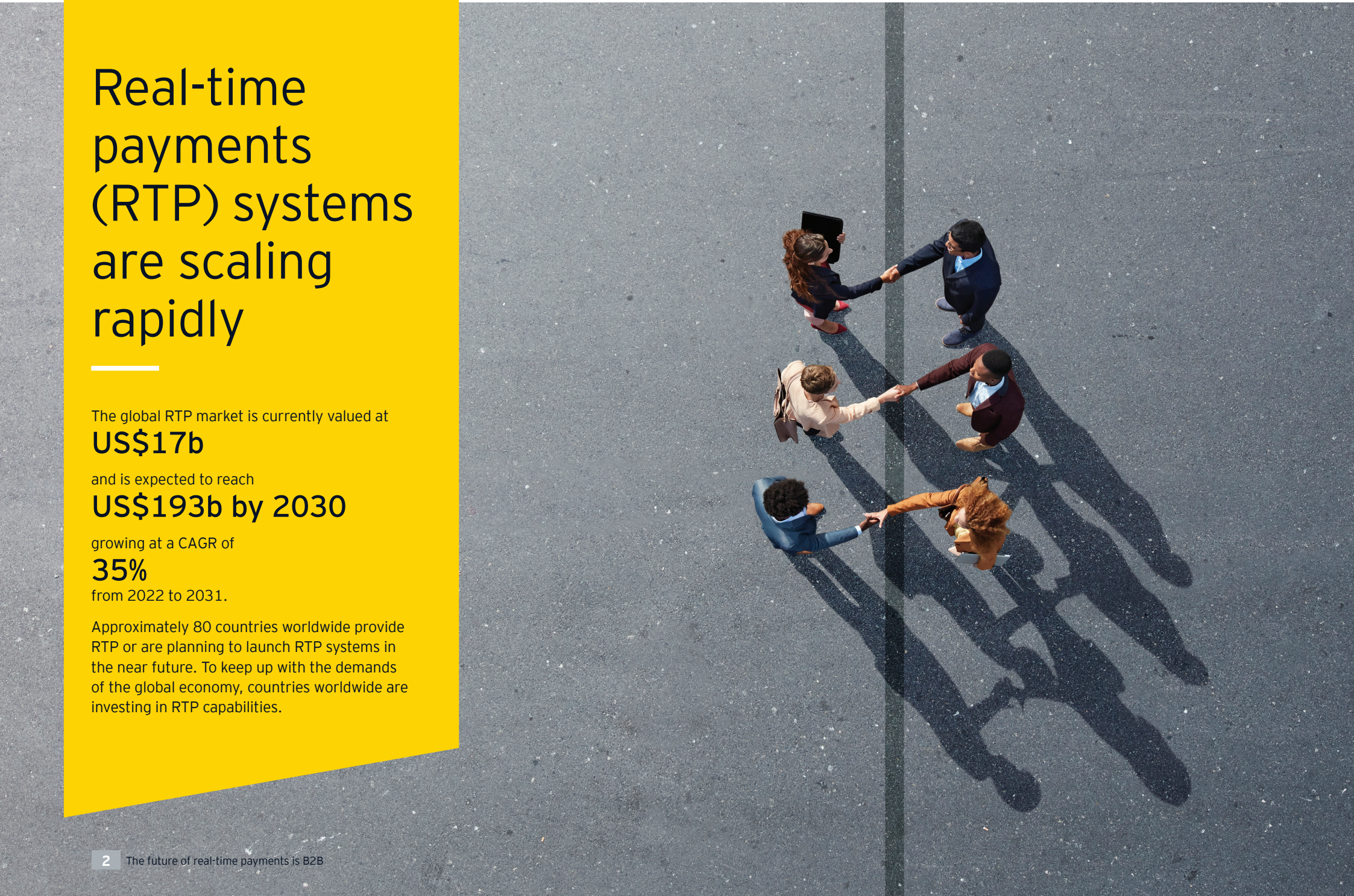
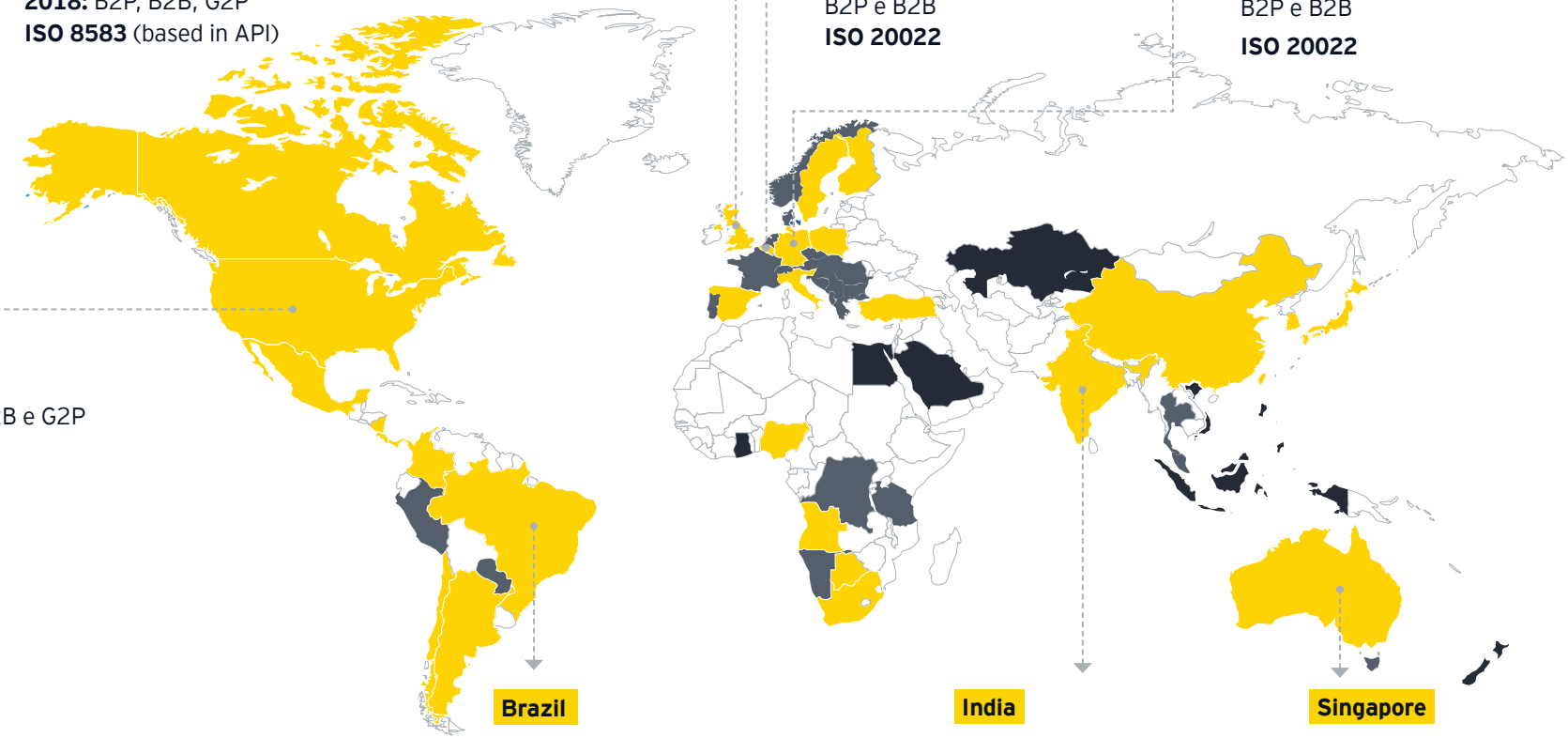


Fig 1: RTP systems are live in several countries worldwide. The volume of payments in transactions (2021/22) are depicted below.



UK

3.9 billion

2008: P2P, P2B
2018: B2P, B2B, G2P
ISO 8583 (based in API)

Belgium

125 million

2019: P2P, P2B, B2P e B2B
ISO 20022

Germany

1.2 billion

2017: P2P, P2B, B2P e B2B
ISO 20022

US

1.8 billion

2017: P2P, B2B, B2P, P2B e G2P
ISO 20022

Brazil

29.2 billion

2020 (Pix): P2P, P2B, B2B, P2G
ISO 20022

India

89.5 billion

2010: P2P
2018: P2B, B2P
ISO 8583 (based in API)

Singapore

~65 billion

2014: P2P
2017: P2B, B2P, B2P
ISO 20022

Person-to-Person **(P2P)**
Person-to-Business **(P2B)**
Business-to-Person **(B2P)**
Government-to-Person **(G2P)**
Person-to-Government **(P2G)**

- Countries already using
- Under discussion or design
- Planning to use

Source: EY analysis

The Unified Payments Interface (UPI) platform in India (80 billion transactions in 2022), Pix in Brazil (25 billion transactions) and PayNow in Singapore (180 million transactions) represent the three largest at-scale RTP platforms globally.

Bilateral agreements between countries linking their RTP systems are also growing. By utilizing the strengths and technological expertise of different players involved in RTP, countries can make better use of financial, intellectual and technological resources in a transparent way that prioritizes end-users. The UAE, which recently launched its Aani RTP platform, is in talks with India's National Payments Infrastructure Limited (NPIL) to leverage technology from the market-leading UPI platform. Another example Thailand's PromptPay, which has established bilateral links with similar systems in countries such as Singapore, Cambodia and Laos.

Different use cases and approaches for leveraging RTP platforms

The broad characteristics of RTP are universal, e.g., near-instantaneous transfer of funds between accounts with immediate availability of the funds for the recipient, real time or very near real time initiating, clearing and settling in a matter of seconds. These payments are confirmed in real time through a balance update, with the payer's account reflecting the deduction of funds as soon as the payment is authorized. While settlement times can vary, many RTP systems complete the transaction within seconds. It is important to note that once an RTP is made, it is irreversible. In the past, RTP systems were subject to limitations based on time and day, but these systems operate 24x7x365.

The benefits for users are also similar across RTP systems worldwide:

Simplicity

To pay or receive payments, users typically click or swipe on their preferred app, which has been designed with a simple and user-friendly interface for easy mass adoption.

Innovation

Users typically use usernames or aliases linked to underlying verified bank account details for transactions, which unlocks innovation and adoption. For example, UPI in India owes much of its success to the underlying infrastructure of Immediate Payment Service (IMPS), and its innovative features, such as the use of UPI IDs instead of bank account numbers and IFSC codes, have made transactions effortless. In Brazil, Pix users similarly use their Pix keys for transfers. The integration of bill payment systems, e.g., Bharat Bill Payment System (BBPS) in India, has also been instrumental in creating an innovative platform for recurring bill payments. The local RTP ecosystem also means that once a user has signed up, they can easily send or receive money from anyone across the ecosystem, including cross-border transfers where bilateral or multilateral arrangements are in place.

Security

Advanced security is one of the key strengths of all RTP systems, with multi-factor authentication, e.g., device and biometric identifiers and one-time passwords (OTP), common across platforms. Users also need to register with the same mobile number that they have registered with the bank. Additionally, the local mandatory know your customer (KYC) process further enhances the security of the platform.

Different approaches to technological and commercial designs of RTP systems are emerging, driven by national needs and and local regulatory environments.

Architectural design standards

Most RTP platforms have adopted the ISO 20022 messaging standard, which should allow for easier integration with SWIFT cross-border messages which are also based on the same standard. The Indian UPI platform and the UK NPA platforms have however chosen the ISO 8583 standard, which will make universal interoperability more difficult to achieve.

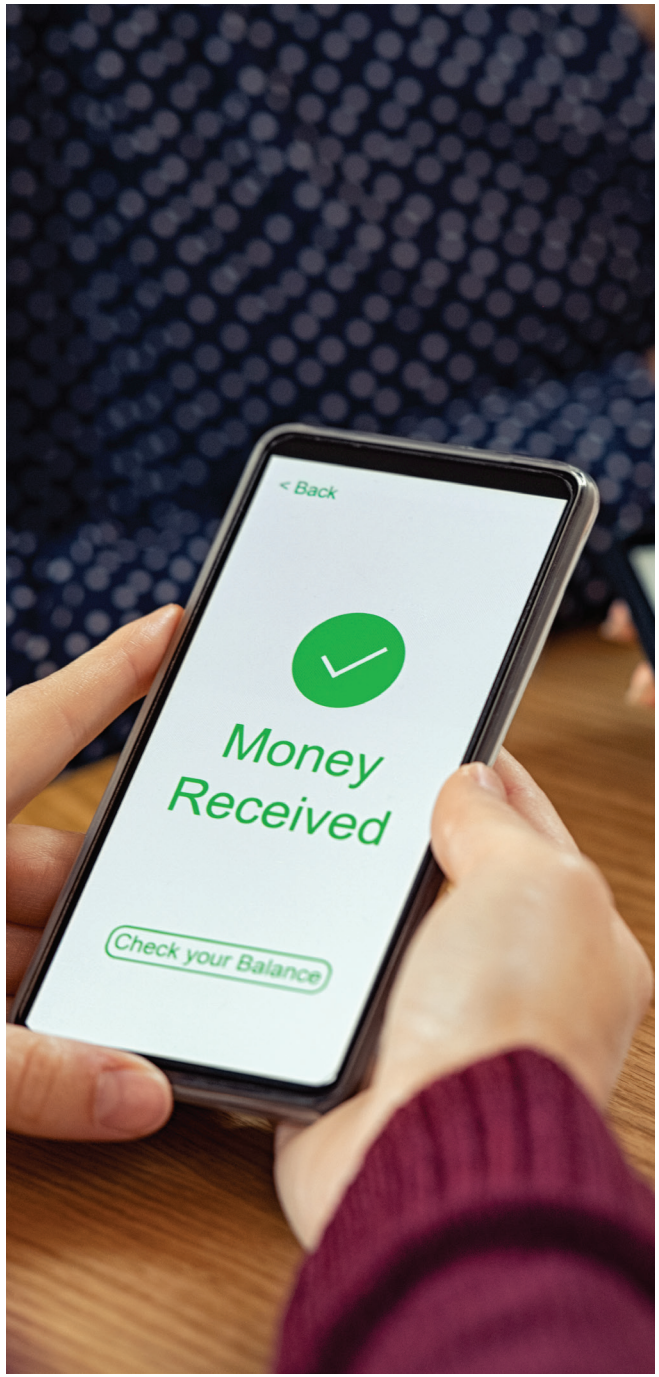
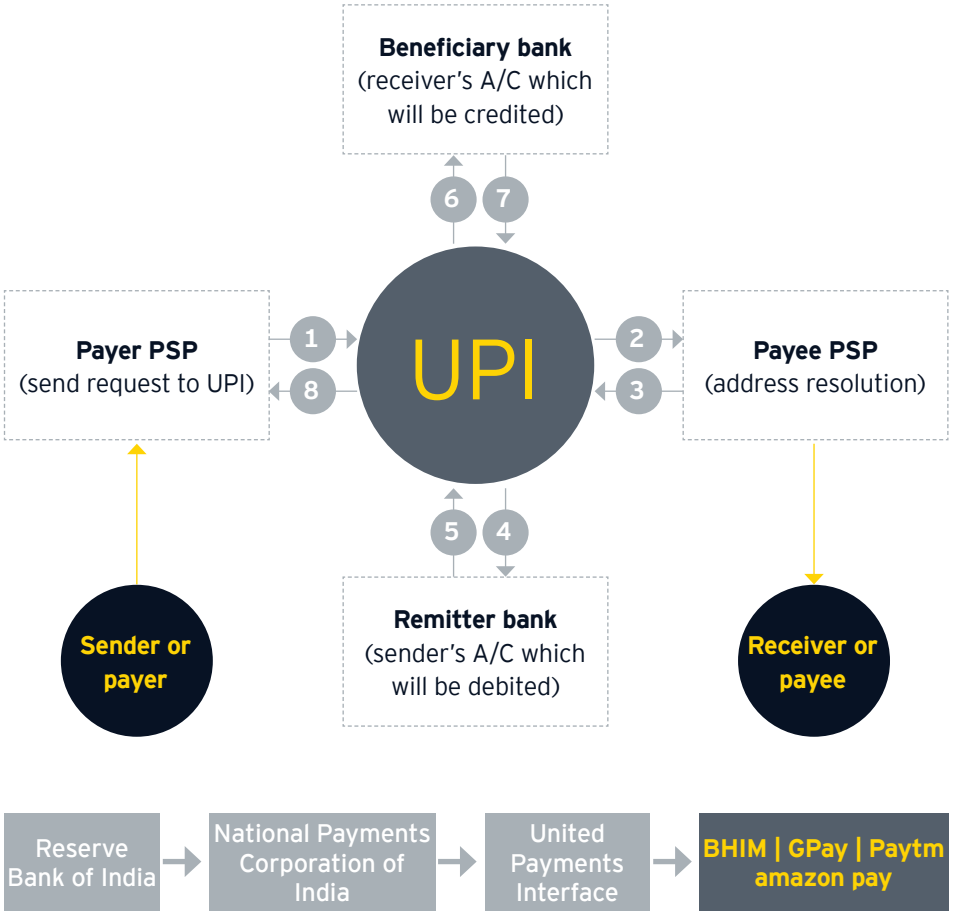


Fig 2: Comparison of four-party vs. three-party RTP architectures in Brazil and India

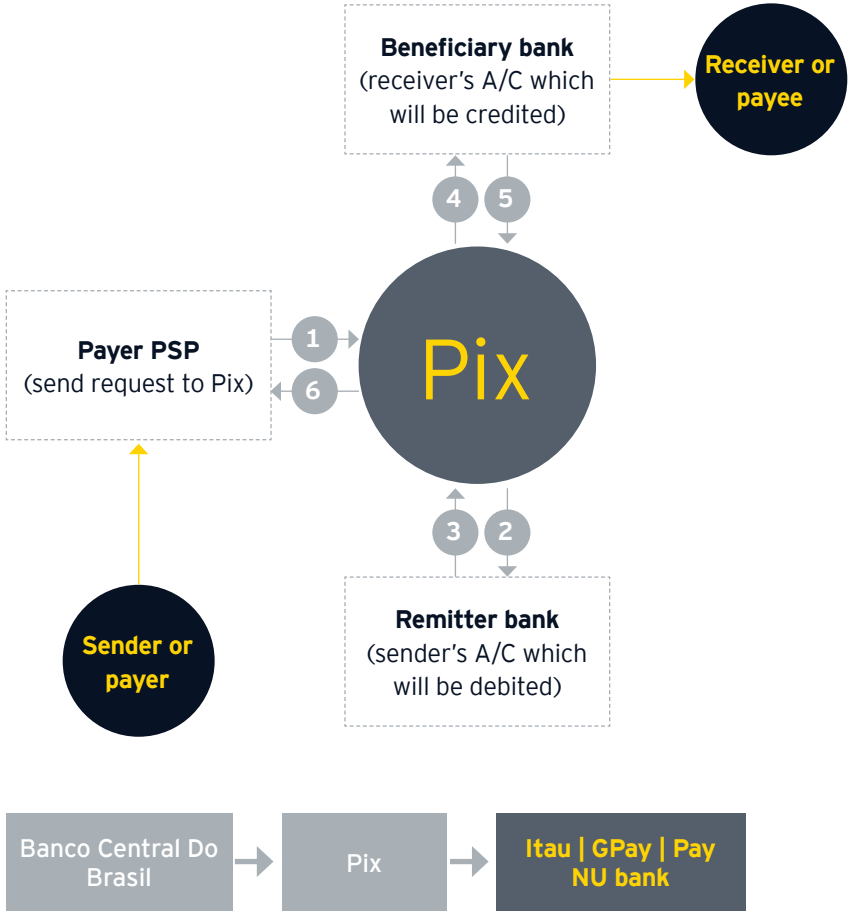
Four-party model

UPI is domain-based decentralized addressing system, in which data linking a person's alias to their account is stored in their provider's database.



Three-party model

Pix is maintaining the user addresses in a centralized directory at the Central Bank of Brazil.



Similarly, while all RTP platforms allow users to use aliases instead of full bank details, the addressing schemes vary across a combination of verified phone numbers, email addresses or platform-specific aliases as in the case of Pix in Brazil. Pix also uses a centralized store of aliases and their mapping to verified bank accounts, while other systems (e.g., UPI in India, InstaPay in Egypt) federate the tokenization of bank account details to the payment service providers (PSP).

Pix also uses a more centralized three-party model with the scheme operator at the center, while others like UPI have adopted a more open and federated four-party ecosystem model, enabling easier integration by a range of market participants.

Commercialization

Brazil has progressed among state backed RTP systems in establishing a simple commercial model where merchants may be charged a fee by the acquiring banks for supporting Pix payments. P2P transfers between individuals are free on Pix, and are also likely to be free in India, where UPI has a key role in driving financial inclusion among price-sensitive blue-collar consumers. In other markets, RTP platform operators are evaluating charges also for P2P transactions, as well as the appropriate levels of charges, e.g., in most markets, merchants are acutely sensitive to interchange costs for both card-based and RTP.

Importance of B2B use cases

Most RTP systems globally have focused primarily on consumer-focused services, e.g., splitting bills, paying for utilities and on public-transport systems, or for distributing social welfare benefits to citizens.

In Brazil, Pix has however focused on both consumer and B2B use cases, with

8.5 million **business** and **40** **financial institutions**

registering Pix keys as of April 2022.

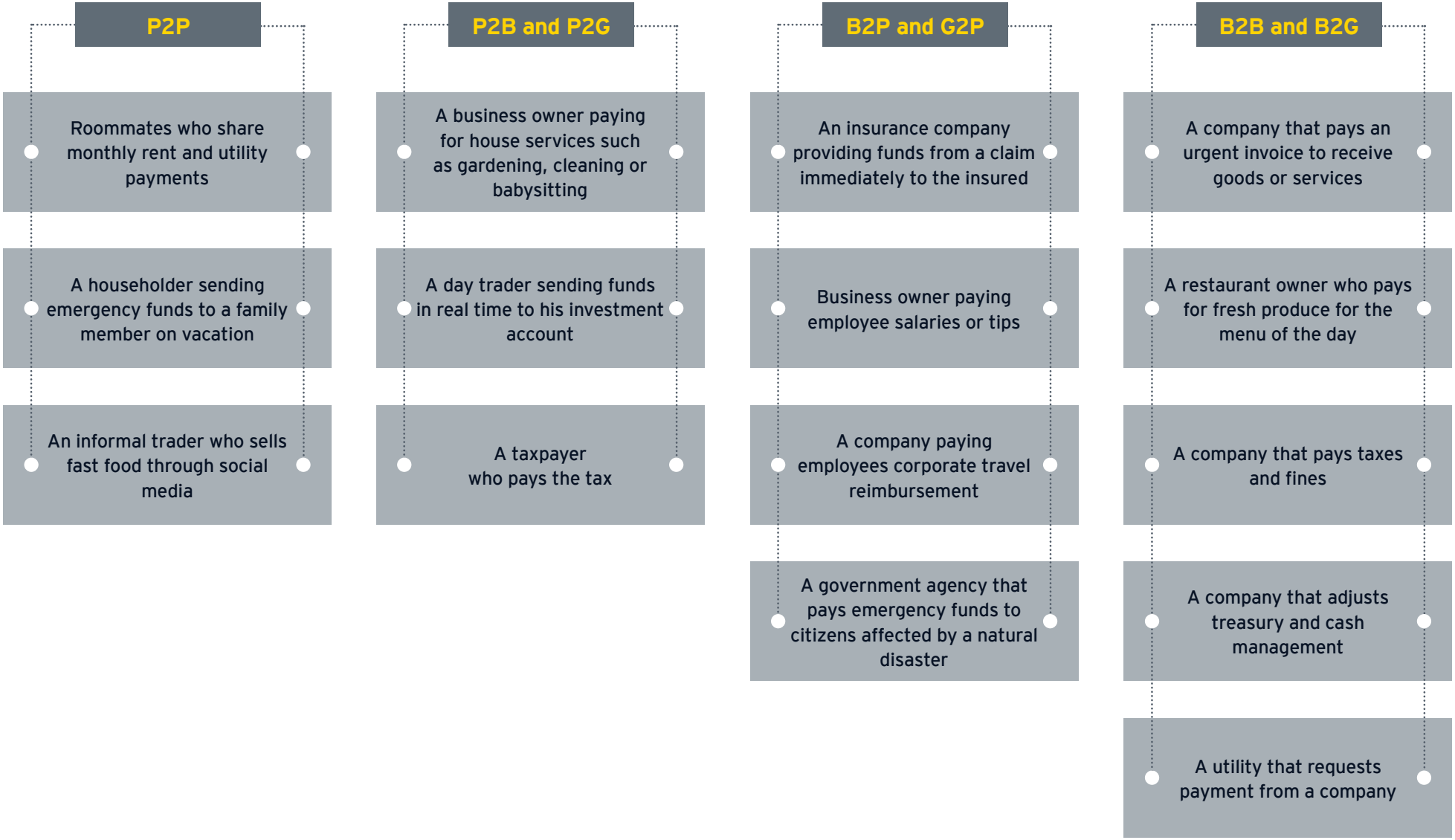
B2B transactions also constituted

35% **of total Pix transactions** in March 2022.

B2B RTP use cases offer potentially untapped value for corporate users

Many of the simpler B2B and B2P use cases, such as providing refunds, are already live on several RTP systems. Additionally, G2P use cases, including paying taxes and motoring fines, are also expected to go live soon.

Fig 3: Evolution of B2C and B2B use cases in RTP systems



The potential value of B2B use cases for corporate users is greater as they can generate added value on three key dimensions with new instant payment services:

1

Improve customer service

The ability to instantly send and receive payments allows businesses to interact with their customers in a different way. This new way of interacting with customers can improve customer service. For example, insurance or reimbursement payments can be settled in real time, providing an instant level of service to improve the customer experience. This also allows for just-in-time (JIT) payments, where customers can pay at the last moment with immediate confirmation.

2

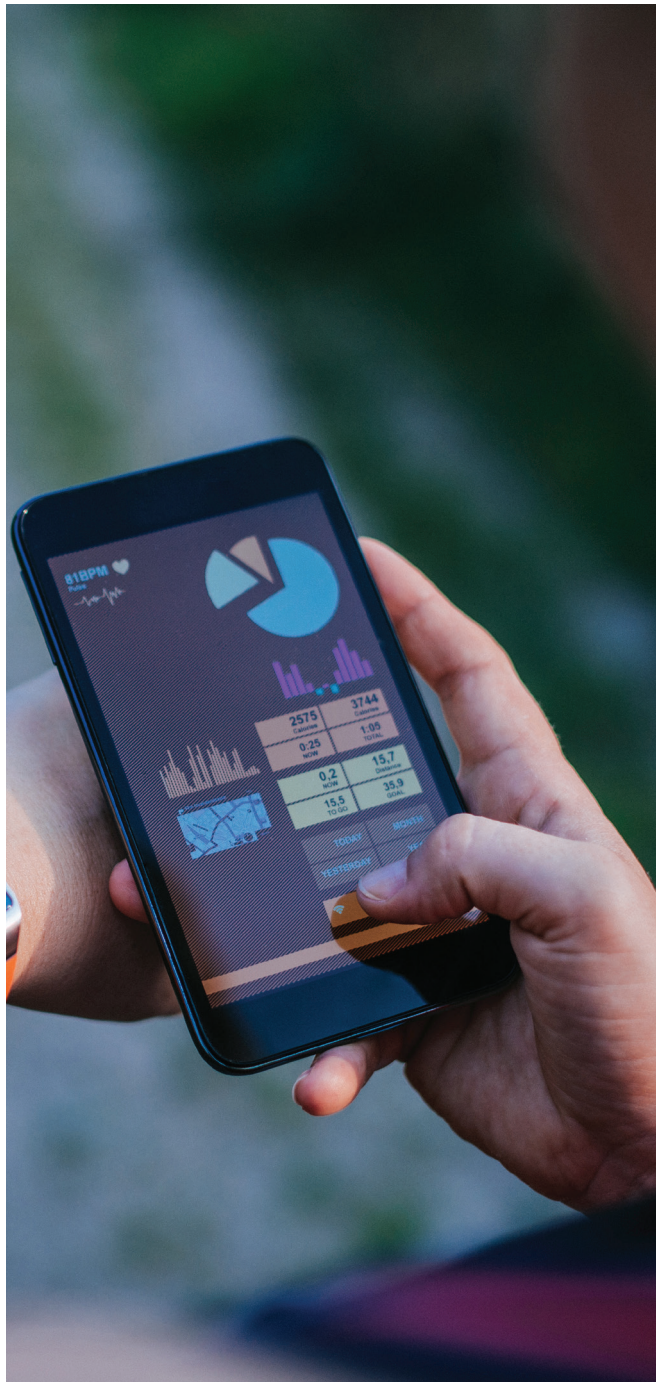
Unlock operational efficiencies

Instant payments also allow corporate clients in different segments to improve operational efficiencies. Immediate confirmation of payments can expedite direct supplier deliveries or reduce inventories. For example, drop shipping business models, which allow the company to send order and money to the supplier for direct and immediate delivery. Adopting RTP systems can significantly enhance operational efficiency by allowing instantaneous transactions, reducing processing time and improving cash flow management.

3

Redefine treasury and cash management services

With 24x7 settlement, there is no set cut off time for end of day positions. Corporate customers need to redefine their internal procedures for managing cash positions and forecasting future cash flows to optimally manage financial positions overnight and on weekends and holidays. For example, corporate payments connected to treasury services that allow an intelligent integration, from the beginning of the payment, transaction status inquiry and balance inquiry. Initiating or requesting payments through portal and online applications for treasury and cash flow management (accounts payable and receivable). Corporates can also move suppliers to RTP, rather than cumbersome invoice processing, where it aligns with working capital management needs.



Instant payments will increasingly be the "new normal" and financial service providers will need to offer them to both consumers and corporate clients, to stay relevant in the future.

Successful RTP adoption impacts the end-to-end payments value chain

RTP solves several friction points in payments by providing immediacy and simplicity. It also creates additional challenges and overhead costs for financial institutions and FinTech providing RTP services.

RTP creates pressure on margins for transaction services, with a large bulk of smaller ticket sizes and capped charges in several markets, e.g., in India, the average ticket size has fallen from US$731 to US$131, even as transaction volumes have grown to over 80 billion in 2022.

With transaction processing revenues being limited, value in RTP systems is shifting toward value-added service (VAS) overlays that are adjacent to payments. Interchange caps in several RTP markets (e.g., India, Nigeria), payment players with API-enabled integrated payment platforms are increasingly monetizing adjacent VAS, e.g., small loans, invoice financing. Having created nimble API stacks, newer players are also rapidly moving from RTP to traditional banking services, e.g., lending. In India, the share of non-bank payments are forecast to increase to 75% by 2026, along with an 80% share of unsecured digital lending.

RTP systems create new operational and technology platform demand for payment processors. Businesses and consumers expect to send and receive money 24x7x365, with funds available in recipient accounts in typically under 10 seconds. Corporate users expect a much more intuitive and integrated experience, with automated invoicing and cash management, collections and reconciliation, and up-to-date online cash positions. Behind the scenes, this requires automated, three-way reconciliation and settlement capabilities enabled by richer messaging, including automated notifications sent to senders (transfer successful) and recipients (funds available). RTP systems also need to be integrated into broader ecosystems and must be available not only for banks but also for finance companies, FinTech and other related companies.

The irrevocability of RTP systems creates new financial crime risks. For example, authorized push payments (APP) fraud in the UK is on its way to becoming a US$1b industry, according to Pay UK. Increasing regulatory scrutiny of financial crime risk on RTP systems is inevitable. In countries with RTP, regulators are moving to monitoring real time compliance with anti-money laundering (AML), financial action task force (FATF), counter-terrorism financing (CTF) and consumer protection regulations.

In the US, the Financial Crimes Enforcement Network (FinCEN) issued guidance in 2020, emphasizing the need for financial institutions to address AML risks associated with RTP. The guidance highlighted the importance of transaction monitoring, customer due diligence and risk assessments in mitigating these risks. Similarly, in the European Union (EU), the European Banking Authority (EBA) published guidelines in 2020 to help financial institutions manage AML risks in RTP transactions. The guidelines recommend various measures, such as enhanced customer due diligence, transaction monitoring and risk assessments, to prevent money laundering and terrorist financing. EU has also proposed a draft regulation to modify the Single Euro Payments Area (SEPA) with the aim of replacing conventional SEPA transfers with instant payments through a set of strict measures. The regulation also mandates PSP to offer their customers a "confirmation of payee" scheme as a countermeasure against authorized push payment fraud.

Other countries, such as Australia and Singapore, have also introduced regulations and guidelines to address AML and fraud risks in RTP. In general, regulators are taking a proactive approach to managing the risks associated with RTP and are encouraging financial institutions to implement robust AML and fraud prevention measures.

To successfully adopt RTP, both established financial institutions and FinTech need to re-evaluate their capabilities front-to-back across the payment value chain.

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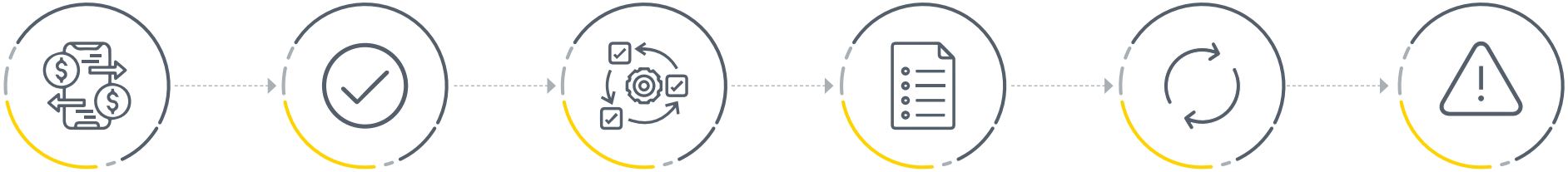
Fig 4: RTP adoption impacts the end-to-end payments value chain



Initiation

- Deliver a simple and intuitive customer experience.
- Accept same-day transactions and instant payment instructions across multiple channels.
- Inform customers of costs involved in processing instant payments.
- Transform payment instructions to instant messaging scheme.

Validation

- Optimize fraud management to fit a smaller window.
- Adapt regulatory bodies processes to improve time-to-market and ensure regulatory compliance.
- Impacts on specific payment instructions for special customers or handling of specific rules.

Processing

- Train operations staff to process instant payments.
- Escalate exception process handling (returns, disputes, etc.).
- Modify end-of-day processes to accommodate instant payments.
- Determine fees and charges for both payer and recipient.

Streaming

- Impacts on prioritizing and scheduling payments based on value date.
- Instant payment processing overlay on a batch processing infrastructure.
- Determine the lowest cost routing mechanism based on payment type, value date, etc.
- Support multiple payment instruction formats.

Clearing and settlement

- Transition to multiple clearing and settlement cycles per day.
- Launching in near real time to accounts and making funds available to clients.
- Improve liquidity management functions to better manage intra-daily liquidity.
- Improve reconciliation processes to account for multiple settlements in one business day.

Customer alert

- Updated customer disclosures and notifications for instant payment options and associated costs.
- Educate customers on how to initiate instant payments.
- Enable near real time transaction status updates and alerts for customers.

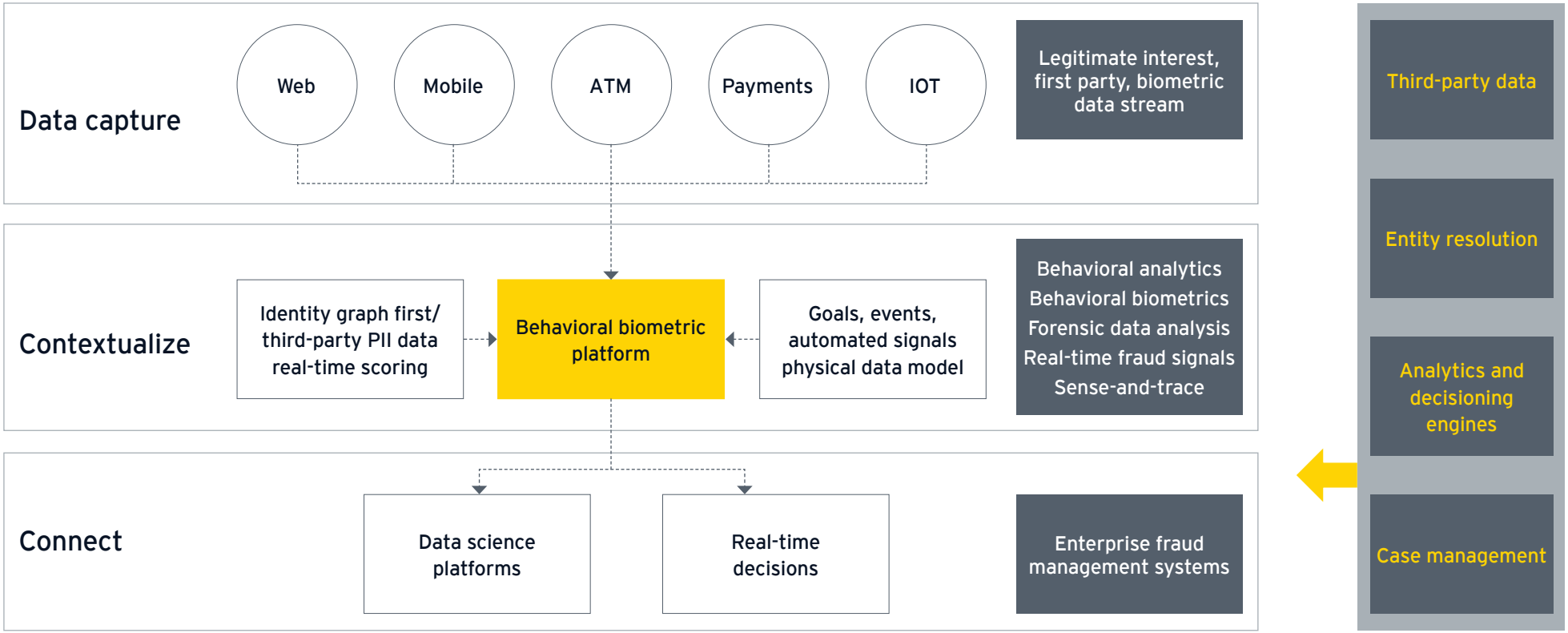
Business owners will need to review their catalogue of RTP use cases for value and monetization potential, as well as partnerships required, impact on internal credit and risk policies, and on capital reserves.

Regulatory compliance teams will need to update risk policies and frameworks, including the modalities and requirements for arrangement rules, real-time fraud monitoring capabilities, as well as guardrails related

to minimum transaction security requirements and service delivery thresholds.

Fig 5: Payment providers investing in real-time data-powered fraud management solutions, e.g., behavioral biometrics

Behavioral biometrics, cognitive signals and geo-spatial data points should be used to understand the user profile and whether the user is in distress in the moment while making the transaction.



Operations leaders may need to re-tool intraday processes to fully support 24x7 operations, update exception-handling rules, as well as automated fraud detection patterns and processes for managing disputes and refunds.

Technology platform owners will need to make difficult prioritization calls on limited change budgets to deliver channels and interfaces upgraded for useability and convenience, revamp online messaging patterns and data structures, strengthen information security, and upgrade transaction processing systems to be able to handle two thousand transactions per second (TPS), as is common with at-scale RTP systems in India, Brazil and Singapore.

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