The better the question. The better the answer.
The better the world works.
Instant Payments: Most companies have already started to transform their businesses with the adoption of instant payments around the world.

USA
- 734M*
- ISO 20022

India
- 15.3B*
- 2010: P2P
- ISO 8583 (based on API)

Singapore
- 154B*
- 2014: P2P
- ISO 20022

United Kingdom
- 2.4B*
- 2008: P2P, P2B
- ISO 8583 (based on API)

Germany
- 430M*
- ISO 20022

Belgium
- 64M*
- ISO 20022

Source: EY analysis

*Volume of payments in transactions (2019/2020)
Context of Adoption: Demand for instant payment models is growing due to a specific combination of factors

**Technology innovation**
New P2P providers of payment solutions are emerging every day, due to some catalysts such as social platforms, digital wallets/currencies and 'contactless' payments.

**Global Trends**
As the list of countries adopting real-time payments grows, pressure increases on other countries to establish the foundation and support for RTP models.

**Consumer Expectations**
Due to rapidly changing demographics, many consumers now expect almost everything to be available in real time due to their experience with other digital consumer services like video on demand etc.

**Expectations of Merchants**
Many small businesses and large retailers look to real-time payments to improve their cash flow management, reduce fraud activities and provide incremental value to their customers.

**New Entrants and Business Models**
In recent years, several new FinTechs have been launched with a focus on 'mobile payments'. Focus tends to be on new real-time services

**Industry Moment**
Industry participants around the world are accelerating the path to real-time payments. Some markets have been instrumental in driving industry participation in real-time payments

Source: EY analysis
**Payment Chain Impacts:** The adoption of instant payments generates impacts across the entire payments value chain

<table>
<thead>
<tr>
<th>Initiation</th>
<th>Validation</th>
<th>Processing</th>
<th>Streaming</th>
<th>Clearing and Settlement</th>
<th>Customer Alert</th>
</tr>
</thead>
<tbody>
<tr>
<td>► Deliver a <strong>simple and intuitive</strong> customer experience</td>
<td>► Optimize <strong>fraud management</strong> to fit a smaller window</td>
<td>► Train <strong>operations staff to process</strong> instant payments</td>
<td>► Impact on <strong>prioritizing and scheduling</strong> payments based on value date</td>
<td>► Transition to <strong>multiple clearing and settlement cycles</strong> per day</td>
<td></td>
</tr>
<tr>
<td>► Accept same-day transactions and <strong>instant payment instructions across multiple channels</strong></td>
<td>► Adapt regulatory bodies processes to improve time-to-market and ensure <strong>regulatory compliance</strong></td>
<td>► Escalate <strong>exception process</strong> handling (returns, disputes, etc.)</td>
<td>► Instant <strong>payment processing</strong> overlay on a batch processing infrastructure</td>
<td>► Launching in near real-time to accounts and making <strong>funds available</strong> to clients</td>
<td></td>
</tr>
<tr>
<td>► Inform customers of <strong>costs involved</strong> in processing instant payments</td>
<td>► Impact on <strong>specific payment</strong> instructions for special customers or handling of specific rules</td>
<td>► Modify <strong>end-of-day processes</strong> to accommodate instant payments</td>
<td>► Determine the <strong>lowest cost routing mechanism</strong> based on payment type, value date, etc.</td>
<td>► Improve liquidity management functions to better <strong>manage intra-daily liquidity</strong></td>
<td></td>
</tr>
<tr>
<td>► Transform payment instructions to <strong>instant messaging scheme</strong></td>
<td>► <strong>Determine fees and charges</strong> for both payer and recipient</td>
<td>► <strong>Support multiple payment instruction formats</strong></td>
<td>► <strong>Support multiple payment instruction formats</strong></td>
<td>► <strong>Improve reconciliation processes</strong> to account for multiple settlements in one business day</td>
<td></td>
</tr>
</tbody>
</table>

**Source:** EY analysis
Bacen PIX: BACEN announced in February 2020 the arrangement of instant payments under the name PIX based on an SPI platform with national interoperability.

**PIX**

**ARRANGEMENT / INSTRUMENT PRODUCT**

- The environment formed by the open arrangement that will be instituted by Bacen
- Determines transfer operations specifications and technical specifications
- Determines the set of rules and structure for the processing and settlement of instant payment transactions between participating institutions

**SPI**

**SETTLEMENT INFRASTRUCTURE**

- The system used for transactions settlement between different institutions participating in the arrangement
- Will be available 24x7 every day of the year, operating on a real-time gross settlement model

**DICT**

**ALIAS DATABASE**

- The component that will store the information of the keys or nicknames that serve to identify the transactional accounts of the receiving users
- It will be centralized, unique and available 24x7 every day of the year

**Resilience:**

- Availability of 99.9%
- 2,000 transactions per second, scalable quickly and securely
- Maximum recovery time (RTO) 15 minutes
- Maximum Allowed Data Loss (RPO) Zero

Source: Bacen
**PIX Payment Initiation:** There are 2 processes for initiating the payment, (i) manual entry of data by the payer and (ii) automated sending of information.

**Way 1:**
**Key Insertion**
The payer may send to his PSP a specific key that allows the identification of the receiving user’s complete information. The PSP must have access to an Alias Database (DICT).

**Way 2:**
**Manual Insertion**
The payer will be able to manually enter the full data of the receiving user, like the process currently performed for monetary bank transfers. As the recipient information is already available, there is no need for the PSP to query the Alias Database.

**Way 3:**
**Estatic QR Code**
The static QR Code is permanent and can be used in several different transactions. It will allow a value to be defined for a product or a value by the payer. It can also be used for transfers between two individuals, for example.

**Way 4:**
**Dynamic QR Code**
The dynamic QR Code is changeable and generates new information with each transaction. It is best suited for paying for purchases, as it can display different information for each transaction and allow additional information about the transaction to be included.

Source: Bacen
**PIX Key Features:** Instant payments provides unique features that can be exploited for consumers and businesses

<table>
<thead>
<tr>
<th></th>
<th>Consumers</th>
<th>Companies</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td><strong>Availability</strong></td>
<td><strong>Availability</strong></td>
</tr>
<tr>
<td></td>
<td>Customers can send and receive money 24x7x365</td>
<td>Businesses can send and receive money 24x7x365</td>
</tr>
<tr>
<td>2</td>
<td><strong>Speed</strong></td>
<td><strong>Speed</strong></td>
</tr>
<tr>
<td></td>
<td>Funds are available to recipients immediately (~10s)</td>
<td>Funds are available to recipients immediately (~10s)</td>
</tr>
<tr>
<td>3</td>
<td><strong>Safety</strong></td>
<td><strong>Safety</strong></td>
</tr>
<tr>
<td></td>
<td>Transactions are based on the SFN Network and have current protection technologies</td>
<td>Strong authentication before transactions start, network monitoring and fraud reporting</td>
</tr>
<tr>
<td>4</td>
<td><strong>Convenience</strong></td>
<td><strong>Convenience</strong></td>
</tr>
<tr>
<td></td>
<td>Intuitive user experience</td>
<td>Intuitive user experience</td>
</tr>
<tr>
<td>5</td>
<td><strong>Multiplicity of use</strong></td>
<td><strong>Multiplicity of use</strong></td>
</tr>
<tr>
<td></td>
<td>Transfers between people and/or companies, payments in physical or virtual establishments and taxes</td>
<td>Automated invoicing and cash management, collections and reconciliation. Online cash position</td>
</tr>
<tr>
<td>6</td>
<td><strong>Aggregated information</strong></td>
<td><strong>Aggregated information</strong></td>
</tr>
<tr>
<td></td>
<td>Notifications sent to senders (transfer successful) and recipients (funds available)</td>
<td>Automated receipt and (re)conciliation, cash management and real-time payments</td>
</tr>
<tr>
<td>7</td>
<td><strong>Open environment</strong></td>
<td><strong>Open environment</strong></td>
</tr>
<tr>
<td></td>
<td>Available not only to banks but also to finance companies, Fintechs and related companies</td>
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</tr>
</tbody>
</table>

Source: EY analysis, Bacen
Multiplicity of Use: The adoption of instant payments and its value proposition has the potential to benefit multiple uses

<table>
<thead>
<tr>
<th></th>
<th></th>
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<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Roommates who share monthly rent and utility payments</td>
<td>A business owner paying for house services such as gardening, cleaning or babysitting</td>
<td>An insurance company providing funds from a claim immediately to the insured</td>
<td>A company that pays an urgent invoice to receive goods or services</td>
</tr>
<tr>
<td>A householder sending emergency funds to a family member on vacation</td>
<td>A day trader sending funds in real-time to his investment account</td>
<td>A business owner paying employee salaries or tips</td>
<td>A restaurant owner who pays for fresh produce for the menu of the day</td>
</tr>
<tr>
<td>An informal trader who sells fast food through social media</td>
<td>A taxpayer who pays the tax</td>
<td>A company paying employees corporate travel reimbursement</td>
<td>A company that pays taxes and fines</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>A company that adjusts treasury and cash management</td>
</tr>
</tbody>
</table>

Illustrative, non-exhaustive

Source: EY analysis
Use Cases: The potential value of use cases for corporate clients is greater as they can leverage added value with new instant payment services

Instant payments will be the 'new normal' and financial service providers must offer them to stay relevant in the future.

The significant investment required to upgrade current payment infrastructures motivates financial service providers to seek out relevant use cases and create value-added services for their customers.

There are 3 potential value-added levers for new 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.

2. Improve 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.

3. Redefine Treasury and Cash Management
   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 in order to optimally manage financial positions overnight and on weekends and holidays.

Insurance or reimbursement payments can be settled in real time, providing an instant level of service to improve the customer experience. 'Just-in-time' payments, customers can pay at the last moment with immediate confirmation.

Drop shipping business models, which allow the company to send order and money to the supplier for direct and immediate delivery. 'Just-in-time' payments, with orders in JIT processes with suppliers.

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/receivable).

Source: EY analysis
Quick adoption: Brazil leads the instant payments implementation and utilization amongst other countries using similar schemes.
Instant Payments in Brazil: PIX will gradually gain relevance, reaching 18~25% of the annual financial transacted volume by the end of 2022 (~R$ 12 trillion Year 2022)

**1st year balance**
- 4T of financial volume
- 7B of transaction
- 348 Pix keys registered

**2nd year expectations**
- 12T of financial volume
- 25B of transaction
- 480 Pix keys

Source: EY analysis; Bacen
PIX VS Payment Methods: PIX adoption was quick: experience, safety and reliability were critical factor driving adoption

Payment Transactions (Quarterly)

Source: Bacen
PIX Participants: All kinds of financial and payment institutions are allowed to participate

All Kinds of financial institutions can participate:
- Traditional banks
- Digital Banks
- Cooperatives
- Payment Institution
- Fintechs
- And more!

PIX
Open Environment
Interoperable
Competitive

735
Nov/20

775
Apr/22

+40 institutions
People Using PIX: Almost 70% of the adult population has already used PIX to pay or receive funds

110 Million Users

65,1% Of adult population

Number of People using PIX in million (x1,000,000)

Source: Bacen
Companies Using PIX: More than 50% of the companies in “SFN” have already used PIX to pay or receive funds

8,5 Million Companies

62.9% Of companies with relationship in the National Finance System (SFN)

Source: Bacen
Transactions Evolution: P2P and B2B transactions represent more than 70% of total value transactions (R$)

Source: Bacen
The Journey: Instant payment models around the world have gone through stages of evolution in line with customer needs and the offer of new services to the market.

**EVOLUTION OF INSTANT PAYMENTS**

- **P2P Payments**
  - Transfer
  - Informal trade
- **P2B / P2G**
  - Online shopping
  - Mobile shopping (contactless)
  - Payment of taxes
- **B2P / G2P**
  - Reimbursements
  - Refunds and income
  - Emergency funds
- **B2B / B2G**
  - Pay / Receive
  - Treasury and cash management
  - Insurance and reinsurance
  - Taxes and fines

(Fast) Adoption of PIX in Brazil

Adoption for corporate payments
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