Global Instant Payments

Current Context and Future Evolution
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What Are Instant Payments?
What are Instant Payments?

**Definition**

- **Instant Payments are known by a variety of names** such as Faster, Real Time, Immediate or Instant Payment
- Instant Payment is a domestic, inter-bank* electronic payment in which the transmission of the payment message and the availability of “final” funds to the payee occur in real time (within seconds) on a 24x7 basis.
- Instant payment schemes are integrated with country core payment infrastructure and directly involve central banks for the clearing and settlement process.

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**Instant payments are currently available 24 hours, 7 days a week in 23 jurisdictions.** Citi is a direct clearing member in 12 of those 23 jurisdictions.

**Countries have developed their own ‘flavor’ of clearing systems for Instant Payments depending on legacy systems, ability to invest, policy decisions and main drivers of change that banks can access.**

**Drivers include aim of fostering innovation in payments services & improving financial inclusion and efficiency gains resulting from migration to a cashless society.**

*Bank account to bank account*
The introduction of domestic, low-value instant payment systems in multiple countries represents an inflection point which will likely lead to significant changes in how consumers and businesses send and receive payments.

**Instant Payments**

Instant payment schemes enable customers to **make electronic payments within seconds, seven days a week and 24 hours a day.**

These payment systems are the **building blocks** on which future payments innovation can be built.

These systems in the corporate B2B space remain limited with many schemes focused on the retail market. **Though, exciting developments are expected ahead across all payment systems.**

### Instant Payment Market Evolution

<table>
<thead>
<tr>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>More countries developing instant payments solutions – instant payments will be present in all major markets by 2020</td>
</tr>
<tr>
<td>Countries with instant payment solutions will evolve to enable both ‘push’ and ‘pull’ instant transaction types</td>
</tr>
<tr>
<td>Value limits will increase as banks become more comfortable with fraud and sanctions controls</td>
</tr>
<tr>
<td>Value added services will be built on top of Instant Payment schemes</td>
</tr>
<tr>
<td>Instant Settlement will evolve for both Payments and Collections</td>
</tr>
<tr>
<td>Payment traffic will migrate from traditional Wires and ACH/Low-Value Instruments; some countries may choose to retire legacy infrastructure</td>
</tr>
<tr>
<td>Payment traffic will also migrate from card schemes to instant payments</td>
</tr>
</tbody>
</table>
Instant Payments are Gaining Momentum

23 countries currently have 24x7 instant payments availability. Citi (TTS) is a direct clearing member in 12 of those markets with plans to expand the footprint as more countries invest in Instant Payments.

**North America**
- Canada: Payments Canada (TBD)
- United States: TCH (2017)

**Latin America**
- Argentina: MEP (2017)
- Belize: APSSS (2016)
- Brazil: TBD
- Chile: TEF (2006)
- Colombia: TBD
- Dom Republic: LBTR (TBD)
- Nicaragua: CBN PaySett (2017)

**Europe**
- Czech Rep: CERTIS (2018)
- Denmark: NETS (2014)
- Norway: NICS (TBC)
- Finland: Siirto (2017)
- Iceland: Bankanna (2010)
- Kazakhstan: TBC (2018)
- Poland: Elixir (2012)
- Romania: Transfond (2019)
- Russia: TBC (TBC)
- Sweden: BIR (2012)
- Switzerland: SIX (1987)
- SEPA: SCT Inst (2017)
- UK: FPSL (2008)

**Asia**
- Australia: NPP (2017)
- Cambodia: CNCH (TBD)
- China: IBPS (2010)
- Hong Kong: FPS (2018)
- India: IMPS/UPI (2012/14)
- Indonesia: Artajasa (2016)
- Malaysia: IBFT (2010)
- N. Zealand: ESAS (TBD)
- Philippines: NRPS (2018)
- Singapore: FAST (2014)
- S. Korea: HOFINET (1999)
- Sri Lanka: CFTS (2016)
- Taiwan: IBRS (2010)
- Thailand: ITMX (2017)

**Middle East**
- Bahrain: Fawri+ (2016)
- Saudi Arabia: TBD
- Turkey: RPS (1992)
- UAE: 2019

**Africa**
- Ghana: Instant Pay (GIP)
- Kenya: PesaLink (2017)
- Nigeria: NIBBS (2011)

**Japan**
- Zengin (2018)

*** Austria, Belgium, Cyprus, Estonia, Finland, France, Germany, Greece, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Portugal, Slovakia, Slovenia, Spain.

What Are Instant Payments?
Instant Payments will Change the Way Treasury Operates

Developments in technology touch many areas of cash management and are interconnected, posing new considerations for treasuries but also allowing them to operate smarter and leaner.

Risk Management: Smarter Controls
- Predictive modeling to proactively anticipate risks and impacts of industrial shifts
- Automated visibility and control into operational activity

Cash Management
- Simplified management of cash flows
- Increased STP/STR

Funding & Liquidity Management
- Increased visibility in positions from continuous exchange of information
- Simplified account structures

Accelerated Treasury

Supported by technology such as:

- API
- Mobile
  - Diverse new market
  - Removal of cash
  - Platform flexibility leads to improved efficiency
  - Lower transactional costs

- Instant Payments
  - Redefined commercial models
  - Pay Real-Time: "Just In Time Payments"
  - Enhanced funding efficiency
  - Improved client experience
  - Shift towards standardised file formats for enhanced data transmission

And many others
The development of Instant Payment systems has been a gradual journey that is creating the foundation for further innovation, with several countries now extending their capabilities.

<table>
<thead>
<tr>
<th>Year</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>1999</td>
<td>South Korea Instant Payment launch</td>
</tr>
<tr>
<td>2004</td>
<td>Mexico SPEI real time scheme extends access to retail payments</td>
</tr>
<tr>
<td>2008</td>
<td>UK Instant Payment scheme launches Alternative Channel services (Paym)</td>
</tr>
<tr>
<td>2009</td>
<td>UK Instant Payment Transaction limit increases to £250,000</td>
</tr>
<tr>
<td>2010</td>
<td>India launches IMPS to digitize retail payments and to facilitate interoperability of mobile payment systems</td>
</tr>
<tr>
<td>2012</td>
<td>India Launches Unified Payment Interface to include alternative payment identifier services accelerating adoption 4 fold in less than 2 years</td>
</tr>
<tr>
<td>2014</td>
<td>Denmark Nets achieves 1.1bn transactions within 7 months of the launch driven by popular MobilePayP2P service (UK achieved the same adoption milestone in 7yrs)</td>
</tr>
<tr>
<td>2015</td>
<td>Real Time Payments Group created to define global market practice for ISO 20022 in real-time system</td>
</tr>
<tr>
<td>2015</td>
<td>EU announces pan European SEPA Instant Pay and publishes PSD2 regulation mandating banks to open access via APIs</td>
</tr>
<tr>
<td>2015</td>
<td>US FED launches Real Time Payments Task Force in partnership with The Clearing House and Banks. This is the first new payment system in the US in 40 years.</td>
</tr>
<tr>
<td>2016</td>
<td>US, India, Singapore, Australia, Hong Kong schemes to include Request to Pay and Tokenization services over the next 3 years</td>
</tr>
</tbody>
</table>

**By 2014**
- 75% of flows in South Korea migrated to Instant Payments, adoption driven by smartphone ubiquity.
- By 2016
  - 30+ instant payments schemes live or planned globally, only Poland and the US not mandated by the regulator.

**By 2016**
- 2015 – UK Instant Payment scheme launches Alternative Channel services (Paym)
- 2015 – Denmark Nets achieves 1.1bn transactions within 7 months of the launch driven by popular MobilePayP2P service (UK achieved the same adoption milestone in 7yrs)
Users expect payments to keep pace with the speed of service in other areas of their lives.
- Waiting five-six days for a check to clear, or three days for a bank transfer to reach the beneficiary’s account seems like banking from a bygone era.

- Instant payment schemes have received keen interest from regulators and payment service providers alike. **Regulators believe that instant payments will:**
  - Expand access to banking services
  - Support economic growth
  - Reduce the use of payment instruments such as cash and check.

- The switch to smartphones is well underway. Around two-thirds of all mobile connections will be via smartphones by 2020, **up from half only two years ago**, according to the GSMA.
  - Along with access to high-speed broadband, smartphones are a pre-requisite for certain types of mobile-initiated push and pull payments.

**Example Countries:**

- **China:** Instant Payments (IBPS) share of transactions has grown **440% between 2010 to 2016** – from 1% to 56% of all transactions.

- **United Kingdom:** Instant Payments’ (Faster Payments) share of transactions has **grown 384% between 2009 to 2016** – from 3% to 14% of all transactions.

- **India:** Instant Payments (UPI) share of transactions has **doubled in the last 6 months**.

**Source:** https://www.bis.org/
Instant Payments will Continue to Grow

A variety of factors are driving countries to adopt Instant Payments at various but steady rates.

- Better use of cash flow
- Reduce fraud
- Improved and integrated client payment experience
- Aid with acceptance
- FinTech start-ups delivering capability
- New remittance players
- clearXchange
- Need to connect across borders
- Pressures from other countries adopting
- Regulatory mandates Central Bank mandate to move away from Cash/Checks
- Ease and cost of implementation
- Smartphone adoption
- Ability to pay via social tools
- Digital currencies

Benefits & Use Cases of Instant Payments
Instant Payments | Key Benefits

In addition to near-instant clearing and 24x7 availability, Instant Payments provide significant enhancements in richness of payment data, messaging standardization, enhanced collection instruments & Omni channel access.

- **Real-Time Payment Experience**
  - Send & receive payments 24x7 with real-time status providing certainty and final availability of fund within seconds

- **Push & Pull Capabilities**
  - **“Credit Push” Payments** - Customers initiated payments directly from existing accounts, meaning greater transparency vs. alternative services
  - **“Debit Pull” Payments** - Beneficiary’s institution (pull) initiates payment on behalf of the customer meaning simpler reconciliation
  - **Request-for-Payment “Pull”** - Consumer’s banking mobile app receives a “request for payment” notification from the merchant and consumer can authenticate via app to make a push payment to the merchant

- **Straight Through Processing (STP)**
  - Any issue with a payment results in immediate rejection, allowing the payer to correct and retry – there are no manual repair queues
  - Irrevocability - once the payer has initiated the payment, they cannot cancel it

- **Richer, Secure Messaging**
  - Payment-related messages facilitate end-to-end billing, reconciliation, and tracking for better customer experience
  - Defined, flexible messaging standards support independent product development by financial institutions while ensuring process is consistent and reliable

- **Integrated Tokenization**
  - Eliminates need for customers to share sensitive account information or know the routing details of recipients

- **Global Compatibility**
  - Conformance to ISO 20022 payment formats and global conventions to eventually enable interoperability across domestic payment systems

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8 Benefits & Use Cases of Instant Payments
These payment types would benefit most from the Instant Payment value proposition; with the immediate transfer, confirmation and ability for funds re-use, on a 24x7 and 365 day basis.

<table>
<thead>
<tr>
<th>Payment types</th>
<th>Instant payment applications</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Consumer-to-Business (C2B)</strong></td>
<td></td>
</tr>
<tr>
<td>e-Commerce payments</td>
<td>• E-Commerce payments</td>
</tr>
<tr>
<td>Physical Point-of-Sales commerce</td>
<td>• Low value subscription payments</td>
</tr>
<tr>
<td>Large value (e.g., capital purchases)</td>
<td>• Alternative to credit card payments which incur additional charges (e.g. flights; hotels)</td>
</tr>
<tr>
<td>Bill payments</td>
<td>• Real time instant credit / loans repayments</td>
</tr>
<tr>
<td></td>
<td>• Just in time payments; Emergency bill pay</td>
</tr>
<tr>
<td><strong>Business-to-Consumer (B2C)</strong></td>
<td></td>
</tr>
<tr>
<td>Recurring (payroll), ad-hoc (e.g., reimbursements, insurance)</td>
<td>• Expedited payroll – self employed</td>
</tr>
<tr>
<td></td>
<td>• Customer refunds &amp; rebates</td>
</tr>
<tr>
<td></td>
<td>• Insurance claim payouts</td>
</tr>
<tr>
<td></td>
<td>• Legal settlements</td>
</tr>
<tr>
<td></td>
<td>• Relocation expenses</td>
</tr>
<tr>
<td><strong>Business-to-Business (B2B)</strong></td>
<td></td>
</tr>
<tr>
<td>Accounts receivable / payables</td>
<td>• Supplier payments including time sensitive payments (early payment discounts)</td>
</tr>
<tr>
<td></td>
<td>• Government payments including tax payments</td>
</tr>
</tbody>
</table>
### Payment Methods | Comparison Across Key Attributes

<table>
<thead>
<tr>
<th>Payment Attribute</th>
<th>ACH</th>
<th>Wires (RTGS)</th>
<th>Instant Payments</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>System Availability</strong></td>
<td>Business Hours</td>
<td>Extended business hours</td>
<td>24x7x365</td>
</tr>
<tr>
<td><strong>Bene Account Posting</strong></td>
<td>Intra day/end of day</td>
<td>Intraday</td>
<td>Immediate</td>
</tr>
<tr>
<td><strong>Funds Availability</strong></td>
<td>1 – 3 days</td>
<td>Up to several hours</td>
<td>Within seconds</td>
</tr>
<tr>
<td><strong>Settlement</strong></td>
<td>Typically once daily, net settlement one to several cycle per day</td>
<td>Gross Settlement, real time or if batch based, several times a day</td>
<td>Converging towards Real-Time (currently net settled several times a day or pre-funded)</td>
</tr>
<tr>
<td><strong>File Processing</strong></td>
<td>Batch</td>
<td>Individual</td>
<td>Individual</td>
</tr>
<tr>
<td><strong>Message Format Standard</strong></td>
<td>Mixed/Proprietary</td>
<td>Mixed/Proprietary</td>
<td>Mixed/Converging to ISO</td>
</tr>
<tr>
<td><strong>Payment Finality</strong></td>
<td>Typically reversible until settlement</td>
<td>Immediate, irrevocable</td>
<td>Immediate, irrevocable</td>
</tr>
<tr>
<td><strong>Payment Confirmation</strong></td>
<td>Only if returned</td>
<td>Inter-bank</td>
<td>End to End</td>
</tr>
<tr>
<td><strong>Non-Payment Messages</strong></td>
<td>Limited</td>
<td>Limited</td>
<td>Extensive</td>
</tr>
<tr>
<td><strong>Payment Initiation Channels</strong></td>
<td>Physical, Online</td>
<td>Online</td>
<td>Omni channel (with added functionality of virtual addressing)</td>
</tr>
<tr>
<td><strong>Typical Transaction Value</strong></td>
<td>Low</td>
<td>High</td>
<td>Low but increasing</td>
</tr>
<tr>
<td><strong>Typical transaction volume</strong></td>
<td>High</td>
<td>Medium</td>
<td>High</td>
</tr>
<tr>
<td><strong>Typical scheme capabilities</strong></td>
<td>Credit transfers, Direct Debits</td>
<td>Credit Transfers</td>
<td>Credits - payer originated Request to Pay (DD w/o mandate)</td>
</tr>
<tr>
<td><strong>Typical Uses</strong></td>
<td>Non-urgent, Supplier, Payroll and Bill Payments</td>
<td>Treasury, Commercial, Securities Payments</td>
<td>Mobile Payments, Bill Payments and Person to Person payments</td>
</tr>
</tbody>
</table>

### Benefits & Use Cases of Instant Payments

- Financial Inclusion
- Digitization of Cash
- Reduced Counterparty Risk
- Accelerated e-commerce adoption
- Standardization
- Improved Data aggregation
- Enhanced control of Payments

10 Benefits & Use Cases of Instant Payments
Citi’s Vision and Future Global Roadmap
The Changing Paradigm | From Batch to Instant

Broadly, the trend in commerce is moving from batch processing to instant processing, which is pushing companies to do business differently.

1. **Growth of The New Business Models**
   - Hyper connectivity enabling always on, real-time payments and rich data
   - Renewed investment in the market infrastructure
   - Regulation supporting financial inclusion, transparency, efficiency and competition
   - Corporates aligning with rapidly changing Consumer Preferences
   - Batch to Instant Processing
   - Open source technology and “big data”. Real-time, information-rich delivery based on sophisticated analytics
   - Platform-agnostic channels allowing maximum access, visibility and flexibility for clients
   - Increased standardization drives network and channel interoperability enabling real time payment transactions and data exchange
   - Accelerated Market Infrastructure upgrades to enable access, ubiquity and inclusion
   - High levels of integration in global settlement and clearing systems
   - Consumer expectations shaped by new economy leaders (sharing economy, digital distribution of goods)
   - Expectations for simple, personalized payment experience accessible via smartphone ubiquity
   - Increasing alignment in the capabilities and expectations of retail/consumer and commercial/corporate end-clients
   - Regulatory reform focusing on open access, ease of use, anytime and anywhere
   - Increased levels of integration in global settlement and clearing systems
Instant Payment Development Depends on Several Factors

These changes in commerce are pushing countries to renew their core payment systems to better meet the needs of users, but legacy systems and different public policy drivers have led each to take its own approach.

Global Trends
- Countries are adding a new instant (real-time) system
- All have enhanced their batch retail systems
- The majority have made upgrades to their high-value payment system (RTGS)

Country Priorities
- Public policy objectives
- User needs and interests
- Legacy payment system capabilities
- Unique modernization objectives

Results

Access
- Core payment systems opening to greater numbers of direct participants

Functionality
- Centralized architecture supports implementation of advanced capabilities and value-added services for participants & end-users.

Interoperability
- Expanding degree of interoperability between core infrastructure & other domestic/cross-border payment systems

Speed
- Development real-time systems initially for retail payments that can gain wider usage by being designed to eventually serve either business or consumer payments.

Risk Management
- Upgrade payment systems to enable risk-reduction processes and controls.
Changes in how companies do business is also in turn pushing banks to change how they support their clients, shifting towards more digital and eventually hyper-connected states.

**Physical Banking:**
- Paper-based
- Buildings and Humans
- Proprietary technology
- Closed
- Slow
- Capital Intensive
- Regulation as a barrier

**Digital Banking:**
- Data
- Software and Servers
- Standardized
- Open
- Fast
- Lean
- Regulation as an enabler

**Hyper-connected Banking:**
- Banking infrastructure opened up to non-bank players.
- Real-time credit and debit capability on a global basis.
- Transaction processing will move from batch to real-time.
- Every bank, clearing system, corporate and government will offer their services through API channels, leading to an environment of hyper-connectivity.
Citi’s Vision for Instant Payments

TTS plans to connect domestic capabilities on instant payments rails and continue to build on services to support companies in their business growth around the world as a global, holistic provider.

**Current State**
- Country-level services
- Instant credit (Incoming/Outgoing)
- Instant debit (Incoming/Outgoing)
- Request for payments in some markets

**Multi-country Harmonization**
- API connecting domestic instant payments schemes
- Harmonized client reporting
- Tokenization enabling Alternative Payments

**Cross-Border Expansion**
- FX Engine connectivity
- Consistent global service
- Virtual Accounts to enable non-account based collections

**Strengthened Network:**
- Corresponding Bank Network on Instant Payments
- Liquidity Management Solutions
- Intelligent Routing; Directory Services

**Infrastructure to Drive Growth**
As Instant Payments become available in more markets across the globe, Citi will continue to stay abreast of developments to provide global consistency to clients.

**Going Forward:**
- Active **client support and education** ahead of ongoing instant payment roll-outs
- **Leadership roles** in key payments industry groups across the globe
- Blockchain and other emerging concepts led by **Citi Innovation Labs** and **Citi Ventures**
- **Instant payments pilots** being developed in each market
- Making **significant investments** in 2017-2020 to roll out real-time payments in critical markets to solve client pain points
- Building “**network of networks**” to tap into multiple networks and payment communities through Fintech-focused payment start-ups

**Linking country infrastructures using:**
- Consistency of our network
- Footprint reach
Summary & Next Steps

To evaluate the opportunities presented by Instant Payments & Collections, corporates may need to consider the following points.

Factors to Consider

- What are the implication of **real-time/instant payment processing** beyond payments only?
- What do **you need from your bank** regarding service, support, analytics, etc.?
- What **capabilities** do you require as part of and also beyond instant and real-time payments

Supporting Elements

- **Infrastructure & Technology**
  - ERP/Treasury Management System changes
  - API adoption
  - Enabling real-time reconciliation

- **Client/ Supplier Outreach & Management**
  - Customer & supplier onboarding / maintenance
  - Token vs. bank account information
  - Discount/ working capital management

- **Liquidity Management / Funding**
  - Daily funding and overdraft management
  - Cash forecasting and planning

- **Operations & Risk**
  - Operations reconciliation
  - Financial reconciliation
  - Fraud management

Citi is committed to driving innovation and is keen to collaborate with clients to explore these questions.
Example Use Cases in Key Countries
Instant payments are most salient for one-time, lower-value B2B payments, which account for est. $11 billion in payments volume in the U.S. alone.

With retail e-commerce sales worldwide forecast to grow to $2.5 trillion by 2018, instant payments infrastructure can pave the way for new products and services based on nearly immediate delivery of online purchases.

Citi is leveraging instant payment infrastructure to build valuable, next-generation payments tools for corporate customers including enriched transaction data.

A real-time infrastructure combined with a ubiquitous merchant-biller directory creates opportunity to store and manage electronic payment identities for businesses so that they can be paid electronically.

With innovation in their DNA, micro multinationals are looking at more efficient (and faster) ways of making and accepting payments. A faster back-end infrastructure would further improve the convenience for them and would be an area of payment innovation in the future.

The below payment flows would most benefit from the Instant Payments value proposition – immediate transfer, confirmation and ability for funds re-use, on a 24x7 basis.

**Instant Payments | Typical Use Cases**

- **Just-in-Time Payments**
  - Time sensitive payroll, Social benefits & tax payments

- **New Products & Services in Corporate Payments**
  - Citi is leveraging instant payment infrastructure to build valuable, next-generation payments tools for corporate customers including enriched transaction data.

- **e-Commerce**
  - With retail e-commerce sales worldwide forecast to grow to $2.5 trillion by 2018, instant payments infrastructure can pave the way for new products and services based on nearly immediate delivery of online purchases.

- **Bill Payments**
  - A real-time infrastructure combined with a ubiquitous merchant-biller directory creates opportunity to store and manage electronic payment identities for businesses so that they can be paid electronically.

- **Person-to-Micro-Multinationals Payments**
  - With innovation in their DNA, micro multinationals are looking at more efficient (and faster) ways of making and accepting payments. A faster back-end infrastructure would further improve the convenience for them and would be an area of payment innovation in the future.

- **Payments to temporary cosmetic sales and counter staff**

- **Payments to Farmers for agricultural products**

**Example Use Cases in Key Countries**
India | UPI w/ Central Addressing for E-Commerce

Citi’s instant collection mechanism enabling your customers to make payments within seconds from their own bank accounts conveniently and securely

**Citi’s Offering—UPI Collections**
- Best-in-class APIs for Client-to-bank interaction to initiate requests
- Real-time settlement information; individual / consolidated funds settlement
- On-demand reports for reconciliation & analytics

**UPI—Market Landscape**
- UPI allows end-customers to send funds using virtual payment address (VPA) on their mobile phones
- Transactions can be push (customer pushing funds to Client) or pull (Client requesting money from their customers)

**Transaction Flow**

1. Client initiates collect request & Customer provides phone #
2. Collect request gets routed to Citi via Client’s webserver
3. Citi presents transaction to NPCI
4. NPCI sends debit request to Customer’s Bank
5. Bank alerts customer on App to enter UPI Pin
6. Confirmation of successful transaction
7. Confirmation to Citi
8. Confirmation to Client
9. Client’s Webserver
10. Credit in Client’s Account

**Key Benefits**
- 24x7 Settlement Information
- Cheaper than debit/credit cards
- Instant transaction confirmation
- Configurable collect request validity
- Easy Reconciliation
- Digitization of Cash transactions

**Few Use Cases For Client**
- New payments method at a check-out
- Small value advertisement sales
- Alternative form of payments for e-tailer and marketplace
India | UPI for B2B/C2B Transactions

Citi’s instant collection mechanism enabling your customers to make payments within seconds from their own bank accounts conveniently and securely

Citi’s Offering—UPI Collections

- Best-in-class APIs for digital communication supporting B2B and C2B flows
- Real-time settlement information; individual / consolidated funds settlement
- On-demand reports for reconciliation & analytics

UPI—Market Landscape

- Bulk-upload functionality to send multiple collection requests for collections from customers or vendors
- Transactions can be pull (Client requesting money from their customers)

Transaction Flow

1. Client logs into Citi portal to create a UPI collection request
2. Collect request gets routed to Citi via Client’s webserver
3. Citi presents transaction to NPCI
4. NPCI sends debit request to payer’s Bank
5. Payer can authenticate transaction using UPI pin
6. Confirmation of successful transaction
7. Confirmation to Citi
8. Confirmation to Client
9. Customer can authenticate transaction using UPI pin
10. Credit in Client’s Account

Key Benefits

- Instant MIS reports providing the status of each transaction enabling easy reconciliation
- Digitization of client collections eliminating cash and check
- 24x7 Instant credit to the client bridging the working capital gap

Few Use Cases For Client

- Utility/Bill collections
- Collection from vendors/partners

Example Use Cases in Key Countries
United States | Potential Real-Time Payments (RTP) E-Commerce Flow

1. Customer adds item into online Cart; initiates checkout / payment
2. Company initiates Request for Payment
3. RFP Transaction presented to TCH
4. RFP Transaction presented to Customer’s bank
5. RFP Presented to Customer for Approval via bank
6. Customer approves RFP
7. Credit Transfer from customer DDA
8. Payment received into Company DDA
9. RT Notification of Payment
10. RT Confirmation of Payment
11. Transaction Confirmed

- Opportunity for linkages between merchant databases and bank directories

• “Frictionless” process needed to capture and leverage customer pre-approval of RFP – either by bank or by merchant

• Potential enhancement to allow merchant to capture customer payment approval and pass with RFP message

• Potential for Card-like “pre-auth” message to allow merchant to capture customer approval during checkout

Macro Considerations & Interdependencies:
- Compliance with emerging network and card association rules
- Incentives for consumer enrollment (loyalty etc.)
- Promotion of Company strategy to encourage/attract new merchants and increase business (full value collection)
- Comprehensive merchant payment options (RTP outbound payments)

• Example Use Cases in Key Countries
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