

# Real-Time Payments **Accelerated**



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The payments industry is going through a fundamental transformation with the advent of new-age technologies, competitive re-landscaping, shifts in customer preferences, and regulatory changes. A mainstay for banks historically, the industry is witnessing the onset of many non-banking alternatives. The rise in competition and consumers' adoption of technologies aided the industry's evolution from cash and check payments to cards and electronic payments. The next wave of digital and instant payments, is clearly embracing speed, security, and a connected customer experience. Regulators around the world are endorsing these changes with several initiatives to serve this trend.

# About<sup>the</sup>report



Clear signs are emerging that the next evolution of the payments industry will be around more advanced real-time payment solutions. Recognizing such a significant transition on the horizon, Wipro Financial Services developed this report—collaborating with teams from business, consulting, Wipro Insights, and subject matter experts—to detail the transition of the real-time payment landscape.



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Real-time payments are not new to the payments industry. However, an innovation-led approach to real-time payments is likely to change the course of the payments industry and its related revenue streams.

—Angan Guha, SVP & Global Head - BFSI

”


**Real-time payment systems offer significant potential to accelerate growth and innovation in the payments industry.** Transferring payments instantaneously, at a lower cost and with irrevocability, leads to a range of benefits for all parties in the transaction. Real-time payment systems saw increased global adoption in the last decade. Adoption is expected to accelerate further in the next decade as the industry is set for increased interoperability and harmonization of data with ongoing adoption of the ISO 20022 messaging standard. Although regulatory bodies typically drive the push for real-time payments, a shift in consumer expectations, technology advancements, and the entrance of new players are key factors.

# Executive summary



This paper outlines the payments industry's transition to real-time payments across several markets. Governed by a country's regulator or central bank, real-time payments are becoming an obligatory offering within the banking sector. However, private players are also collaborating to develop more efficient real-time payment systems in response to changing business environments. We believe that real-time payment systems are ready to take advantage of new-age technologies to attain higher speed, rich context, connectivity, and security, and lower the overall cost of transactions. Emerging technologies and business trends support this innovation. For instance, 5G cellular network technology is likely to bring unprecedented speed, drastically reduce latency, and allow exponentially more data to travel within secure networks. As movement of data becomes faster and less expensive with new technologies, financial institutions accessing the data in real-time will improve the customer experience, fuel connected commerce, and provide new products and services.

National infrastructures are evolving to enhance core payment services and provide several overlay services. Banks need to consider various factors while implementing a real-time payment system if they desire that their standalone systems eventually converge into one. As banks aspire to have a feature-rich payment system that is sustainable for a long period, Wipro's Transformation methodology offers a pragmatic, multi-year guide. We understand that when a national infrastructure offers a capability, the capability needs to manifest itself in the bank product or value proposition to their clients on day one!



Real-time payments (RTP), often called immediate payments, refer to **payments that are nearly real-time or almost immediate**. Real-time payment systems that support instant movement of funds across parties have seen profound interest from global financial markets and are likely to transform the global payments industry in this decade. Real-time payment systems possess the tools to address the potential technology gap that has emerged between traditional payment methods and the advent of new-age payment capabilities. RTP systems, which started in 1973 in Japan, have grown significantly in the last decade. 54 countries<sup>1</sup> have an operational RTP system, and plans are underway in 16 additional countries. Real-time payment propositions have attracted interest from all key stakeholders including regulatory bodies, service providers, industry participants, and consumers.



# Introduction

Regulators across nations push for real-time payments because the infrastructure has the potential to yield real economic benefits. In 2008, the UK became one of the first developed markets to introduce a faster payment service, mainly driven by local regulators. In contrast, the US did not adopt real-time payments until 2017 when The Clearing House (TCH)<sup>2</sup>—a consortium of large banks—created its own real-time payment system. TCH is looking to onboard all US financial institutions on its RTP network by end of 2020; whereas, other competing schemes, including Zelle and FedNowSMSservice<sup>3</sup>, are emerging.





US real-time payment transactions  
are expected to reach

4.2billion<sup>4</sup>

by 2024 from 734 million in 2019

.....

UK Faster Payment Services (FPS) reported

2.4billion<sup>5</sup>

transactions in 2019; the highest  
in a single year since inception

Figure 1: US and UK real-time transaction volume.





The push for real-time payments is also driven by industries with online channels where the customer experience is key to the transaction (e.g., e-commerce). Retailers and merchants also support real-time payments across countries and have seen growth due to lower ticket size of the transactions versus B2B payments. Meanwhile, advancements in B2B real-time payments are expected to propel adoption in other industries as well.

While real-time payment services continue to roll out worldwide, the segment contributes only a fraction (US \$6.8 billion in 2018) to the payment industry's total revenue. However, real-time payments are expected to grow at a CAGR of 30.6% to an estimated US \$25.9 billion by 2023<sup>6</sup>. The potential growth in real-time payments is fueled by harmonization of payment transactions and increased interoperability across global markets. Additionally, adopting ISO 20022 as the messaging standard in payment transactions and using an open API-enabled service will further facilitate innovation in RTPs.

Recently, the novel coronavirus (COVID-19) pandemic, which has pushed governments around the world to implement physical distancing measures, has caused an increase in digital payments between consumers acquiring essential products and services and businesses attempting to deliver quickly. The payments industry is expected to report more than half a trillion real-time payment transactions over the next five years<sup>4</sup>.





# Benefits <sup>of</sup> real-time payment systems

1

The real-time payment infrastructure developed across nations has a clear objective to **yield systemic benefits for all transaction participants**. The core feature of any real-time payment system—the ability to make instant and immutable payment transactions at a lower cost—is the primary benefit for industry participants. The innovation-led growth in the adoption of real-time payments, emergence of new schemes (e.g., P27), and the ISO 20022 messaging standard will expand this list greatly.









## Financial Institutions

### Cost Efficiencies

- Reduced usage of branch banking operations
- Fewer checks and physical invoices bring a significant reduction in paperwork and manual processes
- Reduced cash handling fees
- Shift in low-value payments traffic from costly wire transfers to RTP

### Speed and Transparency

- Potential to process and settle transactions instantly
- Ensure 24x7x365 availability
- Data transparency and accuracy provide rich context to the transactions

### Revenue Diversification

- Potential to unlock new revenue opportunities with extensive usage of real-time transaction data
- Extended relationship with existing customers
- Develop products and solutions for underserved segment



## Customers

### Immediacy

- Immediate access to funds and a better control of finances
- Payments can be made on due date rather than 2–3 days in advance for processing
- Cross-border real-time transactions (P27, SEPA Inst) avoid transaction delays and potential losses due to adverse foreign exchange movements

### Reduced Charges/Risks

- Reduced bank charges, such as check cashing fees, overdraft charges, and interest on personal loans, availed to manage urgent expenses
- Limited exposure to foreign exchange due to instant transactions

### Financial Inclusion

- Drive financial inclusion in emerging markets as FIs provide unbanked consumers faster access to funds at a lower cost



## Corporations

### Enhanced Cash Management

- Better cash flow management, reduced reliance on loans, free up working capital and related costs
- Increased liquidity and reduced payment defaults
- Opportunity to negotiate favorable terms with suppliers and financial institutions
- Favorably positioned to make effective and timely business decisions with improved cash positions and rich transaction data

### Improved Customer Service

- Enhanced customer experience including speed and convenience
- Transparency of the transactions to build trust

### Curtail ForEx Risks

- Address foreign exchange risk by helping corporations transact or transfer money at spot rates, negating the delays in complete transfer and any foreign exchange risk that may arise due to movement in the exchange rates

Figure 2: Benefits of real-time payments.

# The evolution of real-time payments

## 2

Real-time payment systems have been in existence for quite some time; however, implementations of new payment infrastructures have picked up recently in major countries. The increased pace of implementation of real-time payment schemes across markets has been fueling the growth, and ongoing innovations are positioning RTP as a noteworthy industry trend. However, the status and implementation approach differs significantly across countries.









## UK

The **UK** was a frontrunner in the shift to instant payments among the developed nations. Its real-time payment system—Faster Payment Service (FPS)—launched in 2008 and is widely considered the first ubiquitous and modern real-time payment system. The payment system currently has around 30 direct participants and handles more than two billion payment transactions worth over £1.7 trillion a year. Request-to-pay and secure messaging services are on track to launch in 2020. The request-to-pay service will be layered on FPS and will provide organizations a way for their customers to meet payment obligations. The adoption of RTP is picking up significantly. Per the FIS “Flavors of Fast” report, overall RTP transactions in the UK grew by 20%, in terms of both volume and value.

## Europe

Differences in the implementation of real-time payment schemes are seen throughout other **European countries**. In the Eurozone, the European Payment Council (EPC) SEPA Instant Credit transfer (SCT Inst) scheme originated in 2017 as an optional payment scheme for banks. SCT Inst allows instant payment transactions in EUR currency to any beneficiary within the Eurozone in less than ten seconds. The payments scheme has seen a rapid adoption rate as more than 20 countries and 2,000 PSPs have already joined the scheme. The European Central Bank is also planning to deliver a new RTGS system by the end of 2021 through its TARGET Consolidation project. Meanwhile, the European Banking Association created its Request-to-Pay Task Force in 2018 to support the development of a pan-European solution. Additionally, the EBA is also preparing to migrate to the ISO 20022 messaging standard.

## US

Compared to other developed markets, the **US** lags in adopting real-time payments. In 2017, The Clearing House (TCH), a consortium of large banks, developed its own RTP system. The first new payment infrastructure deployed since the 1970s, TCH is operating with half of the approximate 10,000 financial institutions in the country offering same day ACH services. Meanwhile, the Federal Reserve Bank is developing its FedNow RTP scheme and looking to expand the operating hours of FedWire Funds Service. FedNow, an interbank RTGS with immediate access to funds once a payment message is received, will be operational by 2023/24. Another real-time payment option available to US citizens includes Zelle, a consortium of seven large banks that offers a near-real-time payment service on its P2P platform.

Figure 3: Global evolution of real-time payments.

## Regulator-driven implementations

The growth of real-time payment systems across markets over the last decade is widely (approximately 75% of all real-time payment systems) driven by regulatory initiatives. A regulatory push for a new payment infrastructure led the UK's introduction of FPS in 2008. In May 2005, the Payment Systems Task Force stipulated that UK-based banks should eliminate the practice of taking float originating from electronic transfers. An agreement was reached with the UK Payments Administration (formerly Association for Payment Clearing Services) to introduce a near real-time payment system for low cost, same day, domestic payment transactions for internet and telephone banking customers. Since then, regulatory bodies in many countries have commissioned implementation of their own real-time payment systems. A number of new real-time payment systems are operational now, while many are under development.

Initiatives	Americas		Asia		MEA		Europe		Total	
	Developed	Emerging	Developed	Emerging	Developed	Emerging	Developed	Emerging	Developed	Emerging
<b>Regulatory</b>	-	3	5	4	-	2	21	6	26	15
<b>Market Demand</b>	1	-	1	2	-	3	1	1	3	6

Figure 4: Real-time payments by region per primary driver. <sup>7</sup>

Many large countries are looking to develop additional real-time payment infrastructures. The US has announced plans to develop FedNow by 2023/24 and India has drafted plans detailing the eligibility and governance criteria of the proposed new umbrella entities<sup>8</sup>.







## Why regulators are driving growth

Apart from providing instant clearing and settlement, one could ask what other benefits are achieved by regulatory bodies that develop real-time payment schemes. Practical benefits include 24x7x365 availability, increased security, finality, rich data, and immutability. These characteristics are driving the implementation and adoption of real-time payments. Other regulatory drivers for implementation of real-time payments include:

- **Consumer protection:** Inefficiencies in legacy payment systems can burden consumers with late fees and overdraft charges. Financial institutions have benefited from the float created by systemic delays in payment clearing (2–3 days) or other bottlenecks. Instant payments lead to increased liquidity and reduced charges for customers and impacts float revenue for banks. However, banks are focusing on the benefits of real-time payments, reducing operational costs, and increasing indirect revenue from value-added services.
- **Financial inclusion:** Real-time payment systems have enabled governments to deliver benefits directly and instantly to its citizens without going through a tedious distribution system. The instant benefit and last mile visibility provided by RTP systems is bound to attract more populations into the banking system.
- **Financial innovation:** Real-time payment systems have facilitated innovative value-added services beyond just the transfer of funds. The ability of the ISO 20022 messaging standard—the defacto RTP standard—to carry huge amounts of remittance data has helped create innovative solutions including automated payables and receivables, instant loans, and tokenized payments.

- **Harmonization of payments:** Multiple payment types and schemes exist that create overheads for maintaining these multiple payment systems. This requires regulators to ensure that all the payment schemes are resilient and secure, as a failure of one can potentially have a domino effect on the entire national payment infrastructure. Real-time payments will harmonize the payment types or schemes into more manageable numbers (i.e., one or two). For example, debit card payments, low-value batch payments, and low-value real-time gross settlement (RTGS) payments will all move to real-time payment systems making multiple schemes redundant and leading, eventually, to just one payment scheme for all low-value payments.
- **Transparency and traceability:** The current payment systems may or may not have last mile connectivity, but real-time payments are designed for end-to-end (from P2P or B2B), straight-through processing with complete visibility to all parties involved in the transaction. This will also help payment service providers catch sanctioned payments and report suspicious transactions effectively to regulators.
- **Global interoperability:** Eventually, the aim of real-time payments across the globe is to provide consumers and businesses the ability to complete global transactions as easily as domestic payments.

Although regulators drive the majority of the RTP schemes implemented globally, others are a response to changing business environments. The US real-time payment scheme implemented by TCH, a consortium of large banks, pushed banks to sign up for its payment network rather than waiting for FedNow. In addition, continuous innovation from payment service providers, big tech companies, and new entrants support real-time payments. For example, MasterCard Send<sup>9</sup> is an interoperable global platform that enables instant and secure B2C and P2P payments. Several other networks, including PayPal<sup>10</sup>, Zelle, Venmo<sup>11</sup>, Square Cash<sup>12</sup>, Alipay<sup>13</sup>, and WePay<sup>14</sup>, enable real-time movement of funds between family and friends, small traders, and service providers.



# Adopting real-time payments

3

The evolution of real-time payment systems is dependent upon successful adoption, which varies across nations and is driven largely by the inherent characteristics of the local infrastructure, demographics, and a supporting ecosystem. As nations try to develop a strong infrastructure that yields systemic benefits vis-à-vis other payment methods, Wipro believes several factors are essential to drive adoption of a real-time payment system.







## Accessibility

- With customers increasingly adopting payment services, financial institutions are looking to offer multiple digital channels to initiate fund transfers and make instant payments seamlessly.
- Standardization of all digital channels is also an important factor to ensure that validations and error messages are consistent with scheme requirements.



## Usability

- Real-time payments demand the presence of an omnichannel offering and minimal origination inputs to enhance the speed of the flow of funds.
- Presence of a relational database that interfaces with external market infrastructures for outbound and inbound transactions adds to usability.
- Standardized payment templates for similar transactions create a low involvement cognitive structure. Templates can be applicable to both retail and wholesale payments.
- Masking of personally identifiable information (PII) assures privacy for transaction participants, boosts the adoption of real-time payments, and increases the usability of captured information.





## Contextual data

- Understanding the purpose of the payment in order to offer more personalized services becomes an important consideration in dealing with real-time payments. The marketplace is witnessing the use of contextual data as a differentiator between competing payment service providers (PSPs). Industry participants that are able to collect and store data more effectively are better positioned to extract valuable insights and provide a superior customer experience.



## Applicability to multiple use cases

- RTP payment schemes that foster support of all four use cases, namely B2B, B2P, P2P and P2B, experience faster adoption rates.
- Making payment initiation functions available as a service that can be invoked from internal applications as well as channels for payment origination for a variety of purposes (P2P payments, utility bill payments, loan disbursements, investments, payroll, tax payments, cross-border, interbank and inter-entity payments).



## Payment formats

- Large-value payment user groups will react favorably to a payment scheme that accepts a variety of payment formats.
- Bank systems that allow customizations—from simple structures to nested loops with indentations, sections, field groups, and fields—see a remarkable level of stickiness to their RTP offering.
- Mature RTP PSPs use an internal canonical data model for mapping client-supplied formats creating continuum across their enterprise resource plan (ERP) to the PSP's payment initiation service.



## End-to-end visibility of payment status

- Enabling customers' view with live status of payment is a guiding principle in the popularity and adoption of an RTP scheme.
- Details around payment information including the final foreign exchange rate, fees, and charges should be supplied to customers for an unbiased assessment.



## Dispute management

- Popular RTP schemes feature robust claim management processes with clear steps for handling a claim, including assignment of a unique and referenceable case ID.
- The dispute management process should include verification and review steps, provisional credit process with defined SLAs, and stipulation on quantum of provisional credit.
- The provisional credit process and usage should be clearly defined to support the final claim decision.





## RTP rulebook and guidance on R transactions

- RTP schemes that include how to handle payment instances that breakdown see increased adoption. Such schemes have clear guidelines to manage payment recalls, returns, rejections, and cancellations with transparency around PSP obligations.
  - Customer assurance is maintained through clarity on the service level agreements (SLAs) for payment exceptions and communication related to responsibilities. For example, a customer having end-to-end visibility of a payment returned from the beneficiary bank.
- 



## Prompt availability of good funds

- Real-time payments that enforce immediacy in availability of good funds across different services, such as loan repayment, release of a credit line, and instant installment credit processing, see a significant uptick in adoption.
- Irrevocability and immutability of good funds also leads to adoption. These rules, defined within the payment scheme, help PSPs deny recall and cancellation requests after the payment has been posted.

## Challenges of real-time payments

Real-time payment systems are not immune to challenges in terms of global interoperability and adoption. The eventual need for the payments industry is to have standardized real-time payments that can be accessed globally. The harmonization of a messaging standard (ISO 20022) and the technologies used between different national real-time payment systems is important to ensure interoperability. This is a bigger challenge for countries that are looking to implement more than one real-time payment system (e.g., the US with TCH and the anticipated FedNow). Similar issues could also be seen in the Eurozone, where two schemes are competing in the same space. To have a common global standard, technology integration is required at the national and regional level. In the near term, implementation of systems with the ISO 20022 messaging standard will lead to a common language for exchanging payments domestically and internationally.



# Future state of real-time payments

4

As stated, real-time payments are almost immediate and should be final, irrevocable, and delivered on a 24x7x365 basis. RTP systems should be using the ISO 20022 messaging standard and be rich with transaction data. Countries around the world will add to these basic properties; however, the core standards will remain similar so that global harmonization and interoperability can occur in the near future.





## Payment Service Users



Retail



SME



Corporate/  
Gov



FI



Agency



Aggregator

## End-User Overlay Services

Direct  
Debit

Enhanced  
Data

Request  
to Pay

Channels

Consent  
Store

Directory  
Lookup

ISO 20022, JSON

## Channels

Internet

Mobile

Telephony

Branch

API

Auth.  
Store

## Services

Payments  
Messaging

Confirmation  
of Payee

Aggregation/  
Collection

Payment  
Status and  
Tracking

Customer  
Accounts

Directory  
Lookup

Payment  
Execution

## PSP Overlay Services

Single PUSH  
Payments  
(Attended)

Bulk PUSH  
Payments  
(Unattended)

PSP  
Accounts

Non Clearing  
Messages

Payment types including but not  
limited to: Direct Debit, Direct Credit,  
Standing Order, Single Immediate  
Payment, & Forward Dated Payment

ISO 20022, JSON

## Clearing

Payment  
Messaging

Clearing  
Processing

Settlement  
Risk  
Management

Directory  
Lookup

## Settlement

Settlement  
Processing

Central Bank  
Accounts

Network Connectivity


API  
Look-up

Directory  
Services  
MDM

FinCrime

Figure 6: Real-time payments' future architecture.


● Process ● Interface ● Data look-up ● Data Store





Real-time payments run parallel to the ongoing digitalization agenda of the financial world. Today, physical and financial supply chains operate at different speeds independently of each other, creating disconnect between payment and delivery of goods and large amounts of bureaucracy associated with accounting and risk management. If payments were instant and triggered by an event, such as goods inspected and signed in, credit risk would be minimized, and cost of trade would be cheaper. Trade Finance is an example of a bank product that mitigates payment risk and credit risk.

Additionally, the emergence of 5G cellular network technology will bring unprecedented speed and drastically reduce latency in transactions spanning physical and financial supply chains. It will facilitate remote initiations, real time authorization, clearing, reconciliation, and settlement of payments. 5G will allow exponentially more data to travel in secure networks in real-time, generate massive data sets, and enable real-time analytics to detect fraud accurately and effectively.

The world is rapidly moving toward adoption of real-time payments. As mentioned, 54 countries<sup>15</sup> have adopted a real-time payment system that meets our definition. The next stage for these systems is to achieve interoperability across borders. International payments are complicated and experience friction (e.g., access to domestic infrastructure at each stage, foreign exchange, time zone management, etc.). Banking and infrastructure fees are currently managed through correspondent banking and SWIFT at significant cost and complexity. Although various approaches to fix this problem exist, there is no serious contender. A blockchain solution is potentially an answer given that it can deal with the aspects of trust, logic/smart contracts, and transfer of value. Examples include SWIFT GPI<sup>16</sup>, Ripple<sup>17</sup>, and Currency Cloud<sup>18</sup>.



Real-time payments are also dependent on seamless connectivity across transaction parties. Internet of Things (IoT) offers significant potential to connect all networked machines serving humans. The seamless integration of networked devices and payment platforms will allow machines to be easily recognized and profiled in real time. Different ways of digital identification will speed completion of the transaction. At the same time, IoT can make customer and transaction data easily accessible in real time, which banks and merchants can use to make improvements in the customer experience and fuel connected commerce.





Adoption of real-time payments is increasing around the world and systems are ready to deploy new-age technologies to attain higher speed, connectivity, and security, while lowering the overall cost of the transaction. Meanwhile, national real-time payment infrastructures and bank-level transformations continue to see innovation surrounding real-time payments.

A system that knew this payment was for the partial delivery of flanges for contract CR1111 would open a world of innovation.

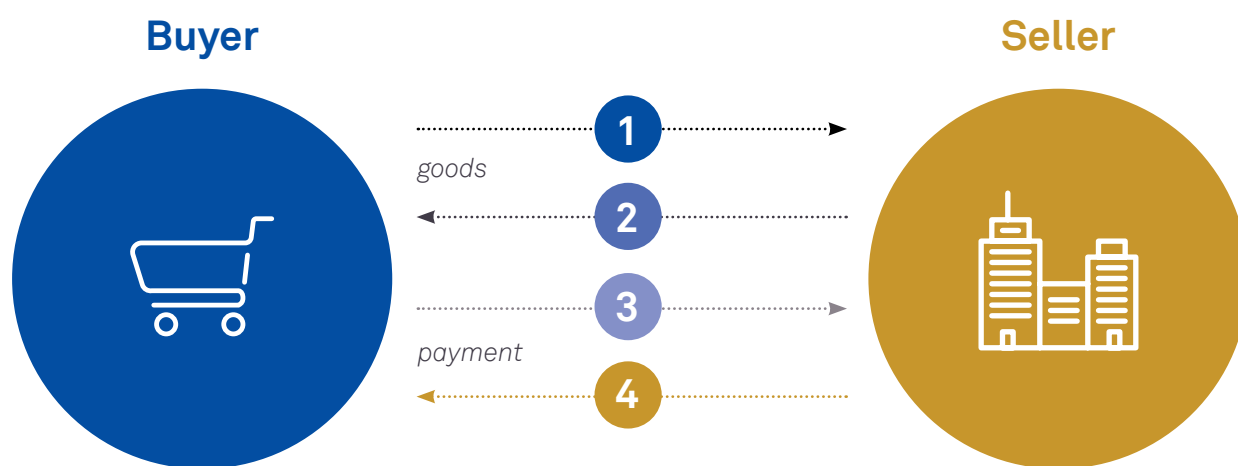


Figure 5: Example of intelligent payment transaction flow.

1. Buyer's ERP system sends order to Seller's ERP that initiates manufacturing, which orders the inventory, estimates labor, etc.
2. Goods are produced and shipped in accordance with instructions and received at Buyer's location.
3. Goods are inspected and signed in on the system, which instructs Buyer's bank to make a payment with all the necessary information to the Seller's bank.
4. Acknowledgment of payment is sent to Seller's ERP.

The next level of innovation is that the payment will inherently understand the expense category (e.g., SG&A, Operating Expenses). This will help banks estimate the working capital requirement of their corporate clients and offer appropriate banking solutions—indirectly strengthening business relationships and profitability for the bank and the corporation.



## National infrastructures

To enable real-time payments, a country or economic block needs to establish the payments infrastructure. This complex and expensive engagement does not start out of customer demand or revenue opportunity. There is no direct financial business case to support the setup of real-time payment systems. Although some real-time payment systems have been in operation around the world for a long time, the generation that meets our criterion started in 2008 when the UK implemented the Faster Payment Service (FPS)<sup>19</sup>.

The original objective of UK FPS, as directed by SEPA and the UK government, was to reduce the time it took to transfer funds between bank accounts from typically three days to one day. The UK decided that if they were going for a same-day system, they may as well move to a few seconds. They worked with VocaLink to use the Cards ISO 8583 standards to transfer funds instantly. Each member (owner) bank had to develop a gateway to access the infrastructure.

Since then, Singapore adopted an updated version of the VocaLink platform, which is based on the now ubiquitous ISO 20022 messaging standard and a gateway was provided for the banks to procure<sup>20</sup>.

Later, Australia implemented a real-time payment system with a layered architecture working with SWIFT. The basic infrastructure is the network and switching middle proxy layer overlaid by third-party services. The first service (Osco) is P2P payment through a proxy so that one can use a customer's telephone number or email to send a payment<sup>21</sup>.

TCH in the US developed its real-time payment infrastructure by using the VocaLink platform based on ISO 20022, basic infrastructure, proxy and overlay layer, like Australia. However, they further added a Request to Pay feature—a service that a payee can use to send a payment request to an individual—to the system. The request appears in the payers banking app for approval or modification. Confirmation of payee enables the payer to confirm the identity of the payee. TCH is also building fraud and anti-money laundering solutions into the system.

The UK is now updating their payments infrastructures with new capabilities including:

- **Layered architecture**
- **Basic infrastructure for clearing and settlement**
- **ISO 20022 stack**
- **Overlay services including confirmation of payee and request to pay**

Iterations of development around the world will continue, at minimum, for the next five years. We expect several payment overlay services to materialize. Examples of these would be:

- **Remittance matching**
- **Micro savings products**
- **Loyalty schemes**
- **Personal finance products**
- **Cash management products**
- **Wallets**





Payment  
Sent



Money  
Received

## Bank-level transformation

Banks have grown organically and by acquisition over the years. In the early years, banks had their own system to initiate payments. Stand-alone monolithic systems, like Atlas and Midas, managed international payments with the combination of a payments engine FX, Treasury, and an accounting system to manage Nostro / Vostro accounting. Some banks built their own systems and they continue to work around them to date. These systems have expanded to accommodate RTGS and automated clearing services like BBACS, direct debit, and SWIFT, and the myriad of reporting and regulatory needs from liquidity to financial crime and the Patriot Act.

Sending a payment from one bank to another is simple: I instruct my bank to pay you, my bank messages your bank that I will pay you, and then, matching with the instruction, transfers central bank money from my bank to your bank, and you are paid. The US ACH and UK BACS systems are more complex. These payment systems provide ACH transactions for use with payroll, direct deposit, tax refunds, consumer bills, tax payments, and many more payment services. Payments are large file transfers, which used to require physically moving computer tapes.

International payments are even more complex. International wire transfers begin with a client requesting a payment to be made to a counterparty in another country. For example, a bank in San Francisco that receives instructions to wire funds to a bank in Japan cannot wire funds directly without a working relationship with the receiving bank. If no direct working relationship with the destination bank exists, the originating bank can search the SWIFT network for a correspondent bank that has arrangements with both banks. Upon finding a correspondent bank with arrangements on both sides of the transfer, the originating bank sends messages through SWIFT to arrange the transferred funds to its Nostro account held at the correspondent bank. Payments are settled after a tedious reconciliation process. The correspondent bank deducts its transfer fee, usually \$25 to \$75, and transfers the funds to the receiving bank in Japan. There may be one or more FX transactions along the way.

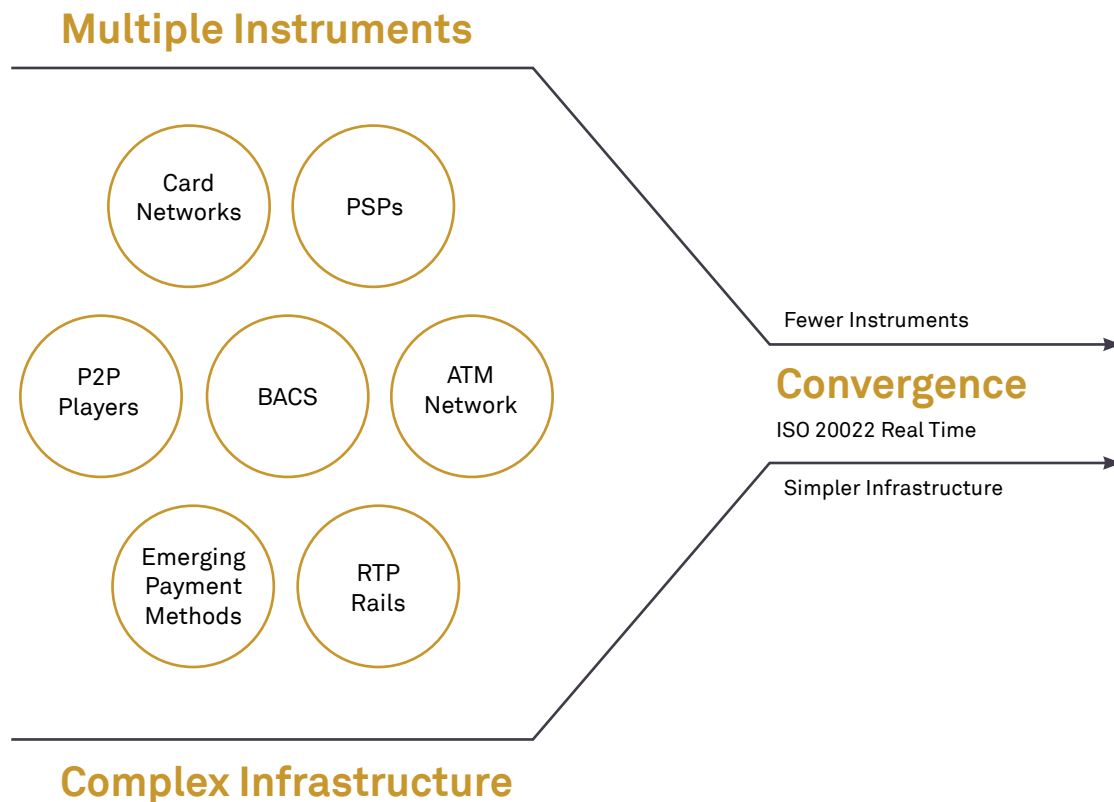


Figure 7: Future RTP convergence.


In the future, market participants want a payment to be a payment whether it is a single push payment or a batch for payroll, international or domestic.

It is obvious to see that there will be a convergence of payments from many types to a few ISO 20022 payments on one or two rails. The complex IT estate that banks have inherited will be too complex, expensive, and inflexible to support in the future.

While payments continue to change (FPS, SEPA, Payments Accounts Directive, PSD2, AML, ISO 20022, Open Banking, etc.), some financial institutions have decided to:

- Put in a new faster payments system
- Implement an Enterprise Service Bus (ESB) with ISO 20022 conversion capability with APIs
- Implement a system to send and receive SEPA payments





These initiatives require proper forward planning and an extensive transformation budget over an extended (e.g. five years) period. Additionally, this approach will continue to populate the agglomeration of systems and increase cost, complexity, and inflexibility—pushing the bank into a corner.

We believe a strategic understanding of the potential changes in payments and regulations—in simplest form, an ISO 20022 real-time payment that can do everything—is needed. The payments industry should extract much more functionality and systems than it puts in place. We can see the world of bank cards and payments: high value and low value, single CT or batch, standing order or direct-debit, domestic or international on real-time ACH all converging onto the single rail or two with ISO 20022.

While banks are investing in upgrades to their payment systems and innovating to increase adoption, having a feature rich payment system that is sustainable for a longer period is important. Banks must ensure that the following dimensions are incorporated in future payment systems to maximize potential benefits.

## Speed

Low system latency and completion of end-to-end transactions in the shortest time possible.

## Context rich communications

Providing context rich communications enables faster resolutions for exception handling and helps to obtain the required information to repair, reprocess, or reject the transaction, resulting in reduced labor cost.

## Reduced manual intervention

Reducing manual intervention at initiation, exception handling, and reconciliation stages of the transaction would result in higher velocity.

## Scalability

Ability to expand to handle potential increases in transaction volume due to higher adoption of real-time payments.

## Innovative

Build client-focused use cases on top of the base real-time payment system and make overlays available for retail and commercial use cases (e.g., guaranteed last moment bill payments or emergency payments / hardship allowance disbursements).

## End-to-end auditability and traceability

As future transaction speeds will limit interventions during processing, ensuring end-to-end auditability and traceability will help the bank analyze transactions, avert current attacks, and control future attacks.

## Cost efficiency

To offset potential declines in revenue from traditional payment services, banks need to include value-added services or overlays to strengthen its revenue stream.

## Mistake proofing

Validate transactions at the point of origination and require payers to validate their instructions, averting costly and time-consuming payment remediation.



# How Wipro can help!

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Wipro has gained extensive expertise in the payments arena while partnering with banks, financial institutions, and payment networks in their technology led transformation. Wipro helps its clients either transform or realign themselves to the new business models and economics of payments with a renewed operating model and cost structure. We serve them by modernizing and simplifying their payments technology infrastructure to optimize cost base and operations, to increase agility, and to minimize risk. We help them develop a transformation roadmap aligned to the business, regulatory, and technology priorities of the bank and the PSPs.







## Helping diverse client groups across the value chain



### Retail & Wholesale Payment Services

- Strategy, operating models, and IT architecture
- Payment hubs and component modernization
- Real-time payments
- Payment portfolio outsourcing and testing
- Payment platform resiliency



### Card Payment Services

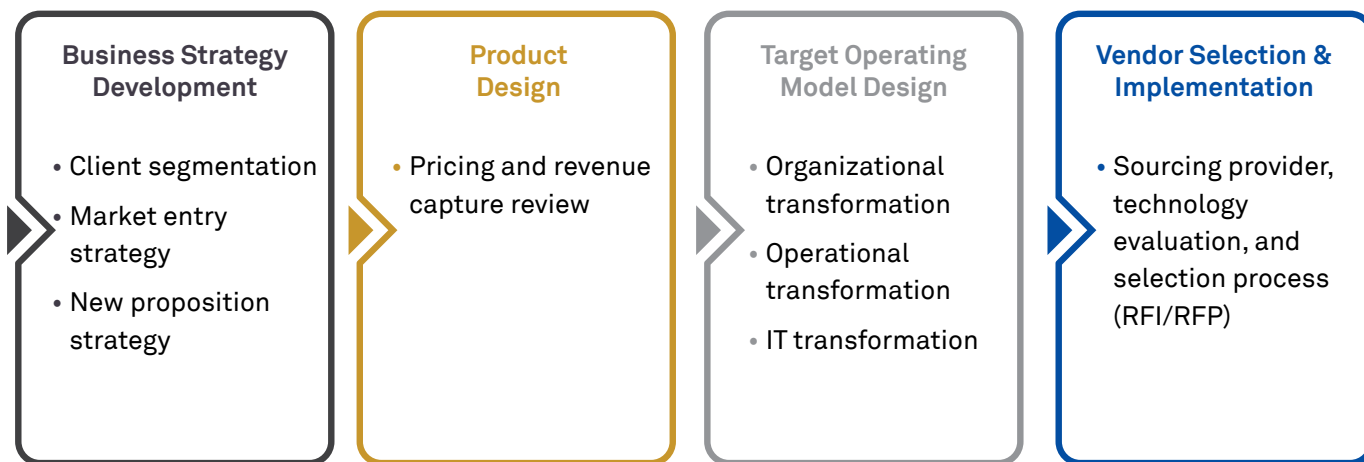
- Issuing and acquiring strategy, operating models, and IT architecture
- Platform replacements
- Portfolio conversions and testing services
- Card portfolio outsourcing



### Emerging Payment Services

- Digital enablement of payment products (wallets, tokens, offers, insights)
- Emerging payments strategy, IT architecture, and roadmaps
- Alternative payment networks

Wipro's Transformation methodology is a pragmatic approach to guide financial institutions through a multi-year program that brings value in the form of cost savings, revenue-generating products, decommissioned legacy systems, and/or established compliance to a regulatory requirement. We understand that when a national infrastructure offers a capability, that capability needs to manifest itself in your product or value proposition to your clients on day one!



With Wipro, a wealth of expertise is available to meet your needs:

- **Strong capability**—We possess end-to-end transformation capabilities including advisory, consulting, and managed services. Our high-quality resources deliver projects within your time frame and above your expectations. Our approach is designed to ensure effective knowledge transfer and pragmatic delivery of quick wins. The objective is to get IT moving in the right direction in a timely manner to better support your business.
- **Deep market experience**—Experts in the payments industry lead Wipro's dedicated payment practice. Whether wholesale or retail payments, we work with all banking and infrastructure providers. Our global experience gives us the ability to write thought leaderships and anticipate industry trends.
- **Delivery excellence**—We deliver solutions based on structured and proven methodologies—refined by numerous client engagements—to accelerate progress and allow projects to proceed rapidly.
- **Alliances and partnerships**—We partner with a broad spectrum of technology solution providers in the payment space to deliver the right solution for our clients.
- **Innovation culture**—Wipro uses cutting-edge and disruptive technologies to solve our clients' real-world business challenges.





Here are a few examples of Wipro's presence in the payments sector.

Client	Challenge	Solution	Impact
<b>LARGE UK BANK</b>  <b>Area:</b> <b>Implementation</b>	<ul style="list-style-type: none"> <li>The client's legacy international payments platform had high level of manual intervention preventing launch of new business propositions.</li> <li>The STP rates were very low leading to exceptionally high operational costs.</li> <li>Client was continuously spending on the platform to comply with multiple regulations.</li> </ul>	<p>Wipro delivered new payables and receivables capability, including:</p> <ul style="list-style-type: none"> <li>Full suite of domestic and international payment types</li> <li>Market parity breadth of payment currencies</li> <li>Sophisticated payment processing: <ul style="list-style-type: none"> <li>Single debit, multi credit payment</li> <li>Single credit, multi debit</li> <li>POBO and ROBO</li> <li>Custom payment routing</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>The STP rates improved from 40% to more than 90% for international payments.</li> <li>Operational costs reduced by 65% over 3 years.</li> </ul>
<b>LARGE US BANK</b>  <b>Area:</b> <b>Consulting</b>	<ul style="list-style-type: none"> <li>Client was unable to meet demand of real-time payments with existing payments infrastructure.</li> <li>Client had no support for ISO 20022 messaging standard.</li> <li>Client was unable to meet the correspondent banking needs.</li> <li>Client had complex and highly customized operational processes.</li> </ul>	<ul style="list-style-type: none"> <li>Wipro conducted assessments across the payment operations and recommended optimized 'To-Be' process flows, depicting the flow of real-time payments for six use cases.</li> <li>Created short- and long-term solution roadmaps, developed a target architecture, and helped create a build or buy decision.</li> <li>Leveraged Wipro's consulting framework to recommend COTS product that best fits client's requirements.</li> </ul>	<ul style="list-style-type: none"> <li>The client was able to process payments originating from multiple sources with multiple standards. The client grew its market share in real-time payments, improved operational efficiency of transactions, and streamlined business processes.</li> </ul>
<b>LARGE ASEAN BANK</b>  <b>Area:</b> <b>Consulting</b>	<ul style="list-style-type: none"> <li>The bank had been seeing regulatory push to become a more competitive, efficient, and reliable payments provider.</li> <li>As a response, the bank was contemplating a payments transformation by centralizing their fragmented payments ecosystem into a payment hub or a transaction processing system (TPS).</li> </ul>	<ul style="list-style-type: none"> <li>Wipro created a target operating model, target architecture, and a business case for payments transformation at the bank.</li> <li>Wipro team used its payments transformation framework for current state assessment, target state definition, and roadmap creation, and then selected the appropriate COTS product from the market as the strategic payments platform for the bank.</li> </ul>	<ul style="list-style-type: none"> <li>The client could handle higher payment volumes, thus leading to higher market share.</li> <li>The client managed to handle new payment types.</li> <li>Reduction in annual operational costs by 33%.</li> </ul>

## About the Authors



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Chetan Ghadge is a consulting partner with specific focus on payments, cards, and digital banking. He has worked with clients globally advising them on strategic payments transformations especially in defining and designing payment target operating models, target architectures, creating business cases and approaches for multi-year payments programs.



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Ganesh is a dynamic, respected, and proven senior professional in Global Transaction Banking and Payments Technology, with a demonstrated track record of accomplishments, driving global real-time payments thinking, transaction banking feature acquisition and market outreach in emerging payments ecosystem. He has been a contributing member of the Federal Reserve Faster Payments Task Force and an active member of the NACHA Payments Innovation Alliance.



### John Quamina

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John is a management consultant that focuses on the strategic transformation of payments within a banking institution. He works from products and economics through to technology transformation. John has worked with national payment infrastructure associations APCA NPP, UK NPA, US NACHA and TCH and the World Economic Forum.



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- <sup>1</sup> “Flavors of Fast report 2019”—FIS
  - <sup>2</sup> PYMNTS.com: Deep Dive: Billing and the Use of Real-Time Payments
  - <sup>3</sup> The American Bar Association: Hot Topic: The Fed’s Proposed Entry into Real-Time Payments Through the FedNow Service
  - <sup>4</sup> “Prime Time for Real-Time”—ACI and GlobalData Plc
  - <sup>5</sup> “<http://www.fasterpayments.org.uk/statistics>”
  - <sup>6</sup> “Real-Time Payments Market—Global Forecast to 2023”  
by MarketsandMarkets
  - <sup>7</sup> “Flavors of Fast report 2019”—FIS; Initiative type on four schemes is not available
  - <sup>8</sup> Reserve Bank of India: Draft Framework for authorisation of a pan-India New Umbrella Entity (NUE) for Retail Payment Systems
  - <sup>9</sup> Payspace Magazine: MasterCard Send: A detailed review
  - <sup>10</sup> CNBC: PayPal users can now transfer funds instantly to their bank accounts
  - <sup>11</sup> PYMNTS.com: Real-Time Payments, Venmo and SCA Delay Top Week’s News
  - <sup>12</sup> The Balance: How to Send and Receive Money with Square Cash
  - <sup>13</sup> Alipay for Global Business
  - <sup>14</sup> WePay, a Chase Company
  - <sup>15</sup> “Flavors of Fast report 2019”—FIS
  - <sup>16</sup> CoinDesk: SWIFT Gives Blockchain Platforms Access to ‘Instant’ GPI Payments Following R3 Trial
  - <sup>17</sup> Ripple.com
  - <sup>18</sup> Currencycloud: Currencycloud announces partnership with Ripple
  - <sup>19</sup> The Clearing House: TCH’s RTP Build on Success of UK’s FPS
  - <sup>20</sup> Finextra: Singapore taps Vocalink for faster payments
  - <sup>21</sup> Finder: BPay launching first real-time payment platform



Wipro Limited (NYSE: WIT, BSE: 507685, NSE: WIPRO) is a leading global information technology, consulting and business process services company. We harness the power of cognitive computing, hyper-automation, robotics, cloud, analytics and emerging technologies to help our clients adapt to the digital world and make them successful. A company recognized globally for its comprehensive portfolio of services, strong commitment to sustainability and good corporate citizenship, we have over 160,000 dedicated employees servicing clients across six continents.

Together, we discover ideas and connect the dots to build a better and a bold new future.

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