

R | T | PSM

*Transforming payments
for the digital age*



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The Clearing House

1853



Founded by New York banks to improve efficiency and remove risk from daily exchanges

TODAY



Owns and operates core U.S. payments system infrastructure, clearing and settling approximately \$2 trillion each day, representing half of all commercial ACH, wire and check image exchange volume

RIGHT
NOW

R | T | PSM

Working to modernize the U.S. payments infrastructure by building a new, ubiquitous, real-time payment system



The whole world is moving to faster payments...

The advent of mobile technology and the growth of digital commerce are driving real-time payments innovation around the world



2001	South Korea	HOFINET
2002	Brazil	SITRAF
2004	Mexico	SPEI
2006	South Africa	RTC
2008	U.K.	Faster Payments
	Chile	TEF
2010	India	IMPS
2011	Nigeria	NIP
2012	Sweden	BiR
	Poland	Express ELIXIR
2014	Denmark	NETS
	Singapore	FAST
2017	Australia	NPP
	EU	SEPA Instant
TBD	Columbia	
	Canada	



... Including the US

The Federal Reserve recognizes the benefits of a safe, faster payment system



“A safer, more efficient and faster payment system contributes to public confidence and economic growth....”

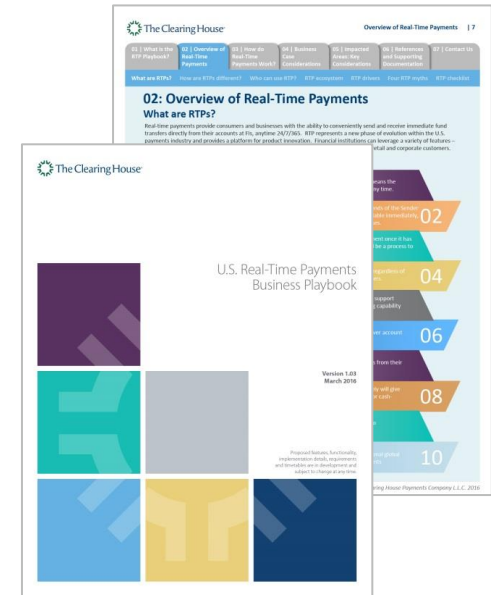
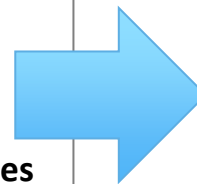
– FRB Gov. Jerome H. Powell

The CFPB is urging adoption of faster payments capabilities



“Faster payment systems hold great promise for consumers,” which “may provide them with greater utility and more effective account management, enabling [them] to take greater control of their financial lives.”

– July 2015 CFPB “Consumer Protection in New Faster Payment Systems” at 1, 3

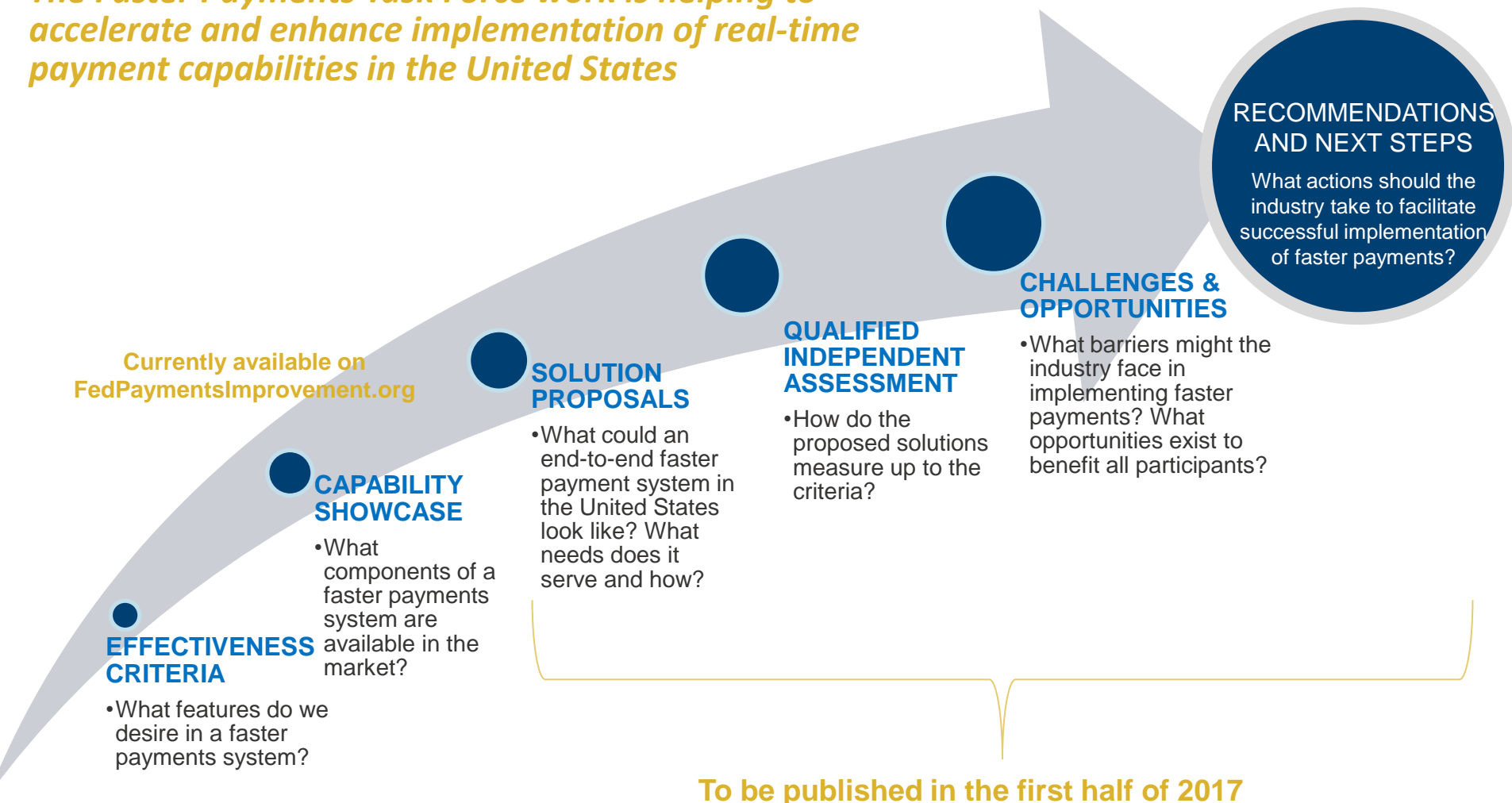


CFPB and Federal Reserve published core principles and requirements for U.S. faster payment systems



The Faster Payments Task Force has been evaluating options for faster payments in the US

The Faster Payments Task Force work is helping to accelerate and enhance implementation of real-time payment capabilities in the United States



Several initiatives are underway to move payments faster in the US

Federal Reserve Faster Payments Task Force

Industry task force to identify and assess approaches for implementing faster payments

- Established criteria for faster payments in the U.S.
- Independently reviewed 22 proposals
- Developing a series of reports to help guide the industry

NACHA Same-Day ACH

Enhancement to the existing ACH network and rules

- Enable 2 same-day settlements for credits and debits
- Faster availability for same-day transactions

Visa/MC Network Enhancements

Enhancements to the existing rules and networks

- Allows for credit payments to be sent in near real time
- Mandates availability in < 30 minutes
- No changes in final settlement

EWS clearXchange Zelle

Financial Institution network that enables P2P payments

- Alias directory services
- Bank to Bank messaging in near real time
- Leverages ACH & V/MC rails for settlement

The Clearing House RTP

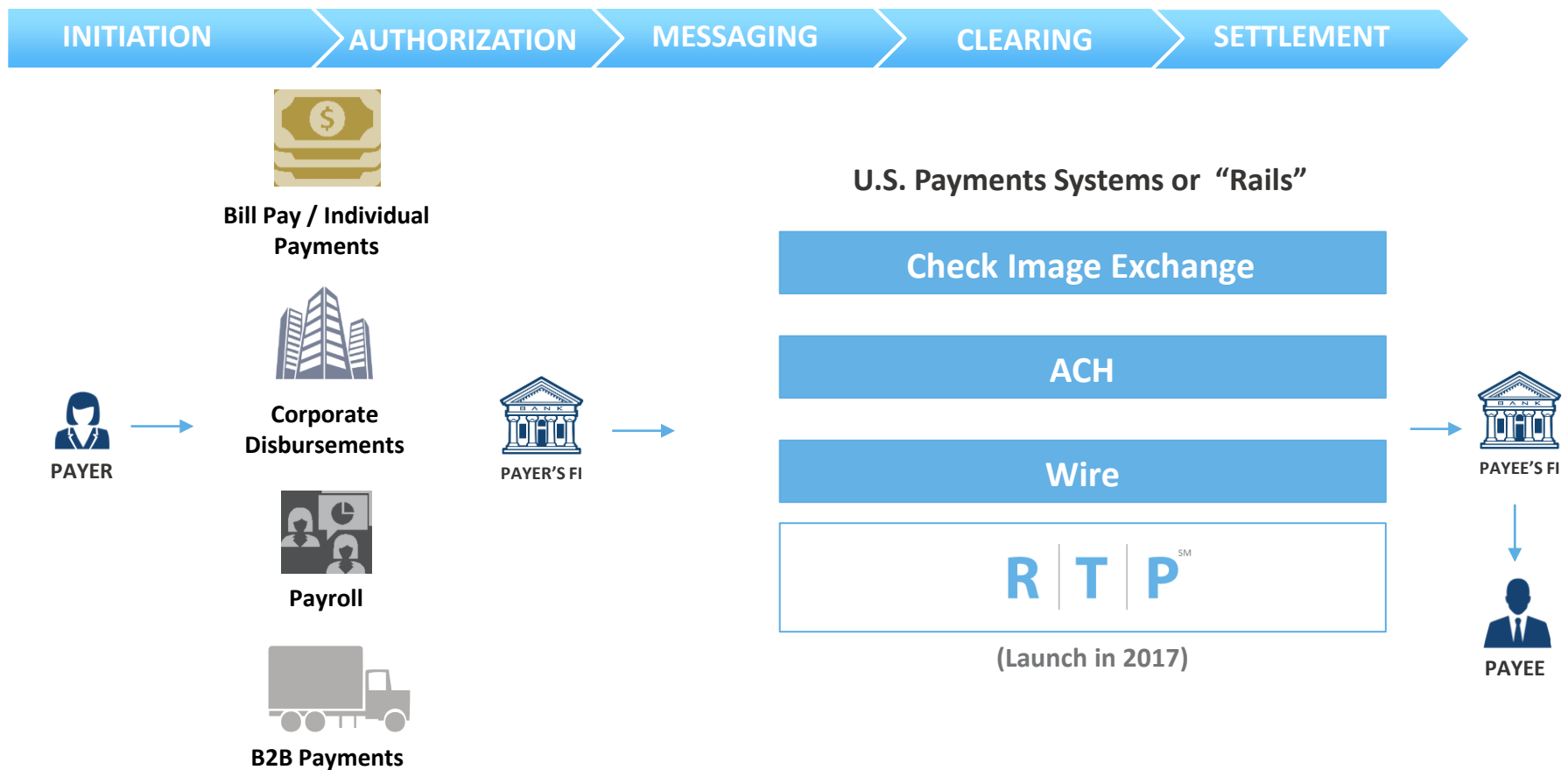
New payment rail being built for the U.S.:

*Not exhaustive



TCH is launching RTP, a new real-time payment network to support multiple use cases

RTP is an all new “rail” for exchanging, clearing and settling transactions between accounts at financial institutions. It’s the first new interbank payment system in the U.S. in more than 40 years.



Safety should be built into faster payment, not bolted on

Implementing a new payment system provides opportunities to make customer protection and security a part of the design

- **Credit push only** – A system based exclusively on credit transfers eliminates the potential for unauthorized debits
- **Bank-grade data privacy and security** – Specific requirements for information security and customer authentication that can adapt to changing threats
- **Centralized fraud monitoring.** – The system operator, is in a unique position to monitor for “red flags” of mass market fraud to mitigate misuse of the system.
- **Tokenization.** – The system should be designed to support routing and processing of tokenized transactions, which will increase payment security and help to limit the proliferation of consumer account credentials.
- **Rigorous enforcement of rules** – The network operator should have comprehensive authority to prevent the system from being misused by bad actors



Faster payments technology considerations

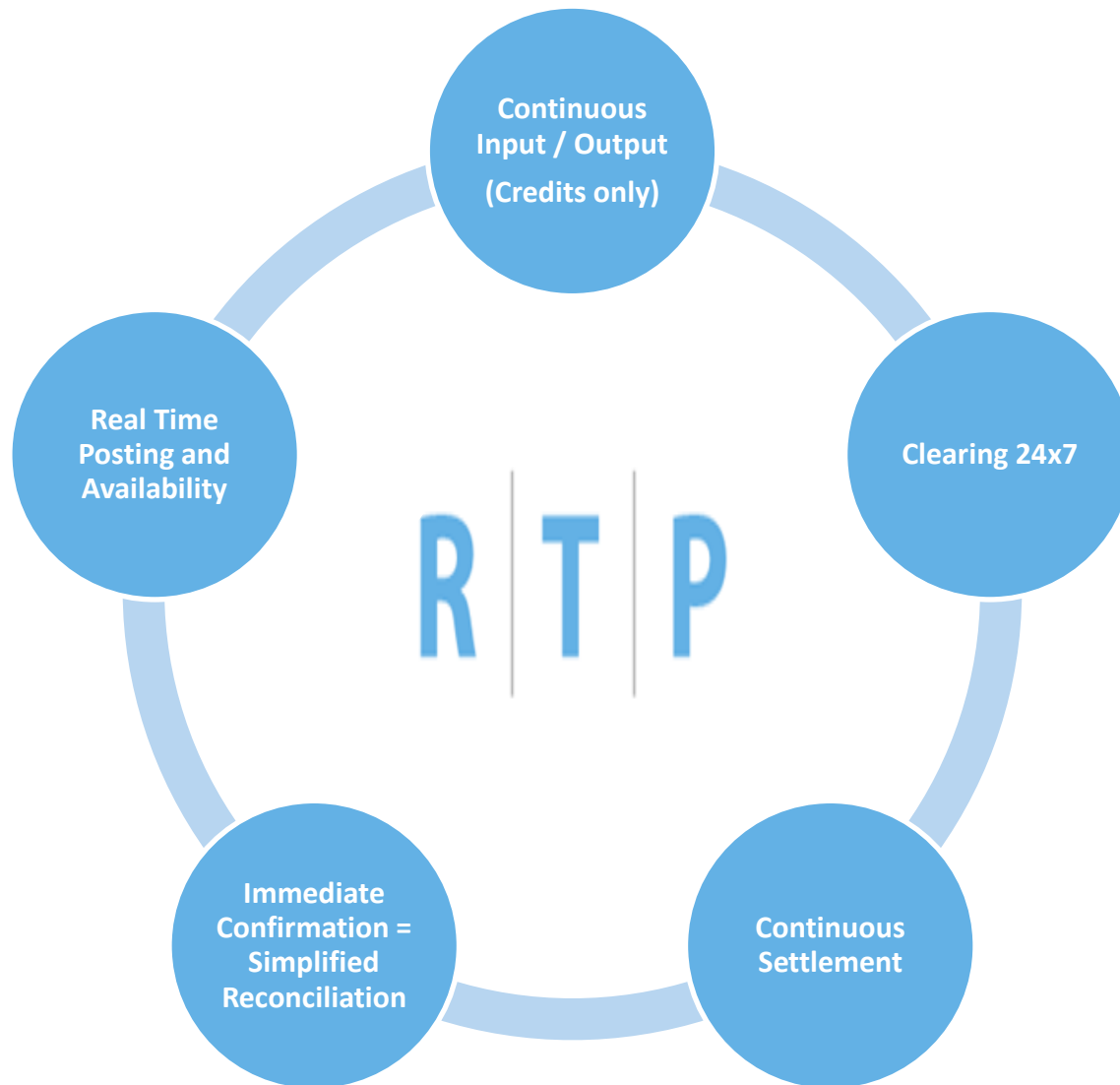
- **Core Deposit Systems**
- **Payments Hub/Payments Gateway**
- **Network Infrastructure**
- **Customer Alerts and Notifications**
- **Online and Mobile Banking**
- **Anti-fraud Systems**
- **AML Monitoring and Reporting**
- **OFAC/Sanctions Screening**
- **Product Platforms**
 - Bill Pay
 - P2P & Account to Account Transfers
 - Small Business/TM Portal Payments
 - Commercial Disbursements
 - Receivables/E-lockbox
 - Balance/Transaction Reporting

Implications of Faster Payments

- 24/7/365 operation
- Immediate payment acceptance, posting and notification
- No manual processes – end to end automation is essential
- Risk management is a front-end process
- Good UI can mitigate risk and improve efficiency
- Users will have little tolerance for slow systems or delayed customer service response



TCH RTP is real-time in every way



RTP Distinctive Features

Credit Push Only

Customers send payments directly from their existing accounts – complete transparency, no pending payments

Payment Status

Immediate notification of successful transfer to end users, providing certainty for both senders and receivers

Payment Certainty

Receivers have certainty that payments will not be reversed or revoked

Immediate Availability of Funds

Receivers have funds available in real-time 24/7/365

Complete AR/AP Messaging

Ability to link multiple messages associated with the same transactions through a common reference

Fulfillment Messaging

Ability to provide confirmation by the receiver that they have received funds, combined with fulfillment information

Data Extensibility

Allows banks to develop Value added services based on extensible data

Global Ready

ISO 20022 is a global standard that supports the needs of multi-national customers and will enable cross-border payments in the near future



Messaging capabilities support the development of value-added products

- Information-rich messaging and consistent rules ensure that each bank can create value-added products without the need to coordinate with counterparties for each new service
 - Related messages can be linked into complex transactions
 - Messages can carry remittance data and reference to external data and processes for extended functionality

Credit Transfer

Basic multi-purpose payment message, including remittance information

Request For Payment

To support P2P, funds request, e-invoicing or e-billing

Payment ACK by Receiver

Message from the receiver to the sender regarding payment disposition (e.g., invoice paid, goods, shipped)

Request For Information and Response

Receiver request for additional information about a payment (e.g., requesting customer acct number, invoice number or purpose of payment)

Credit Push Only

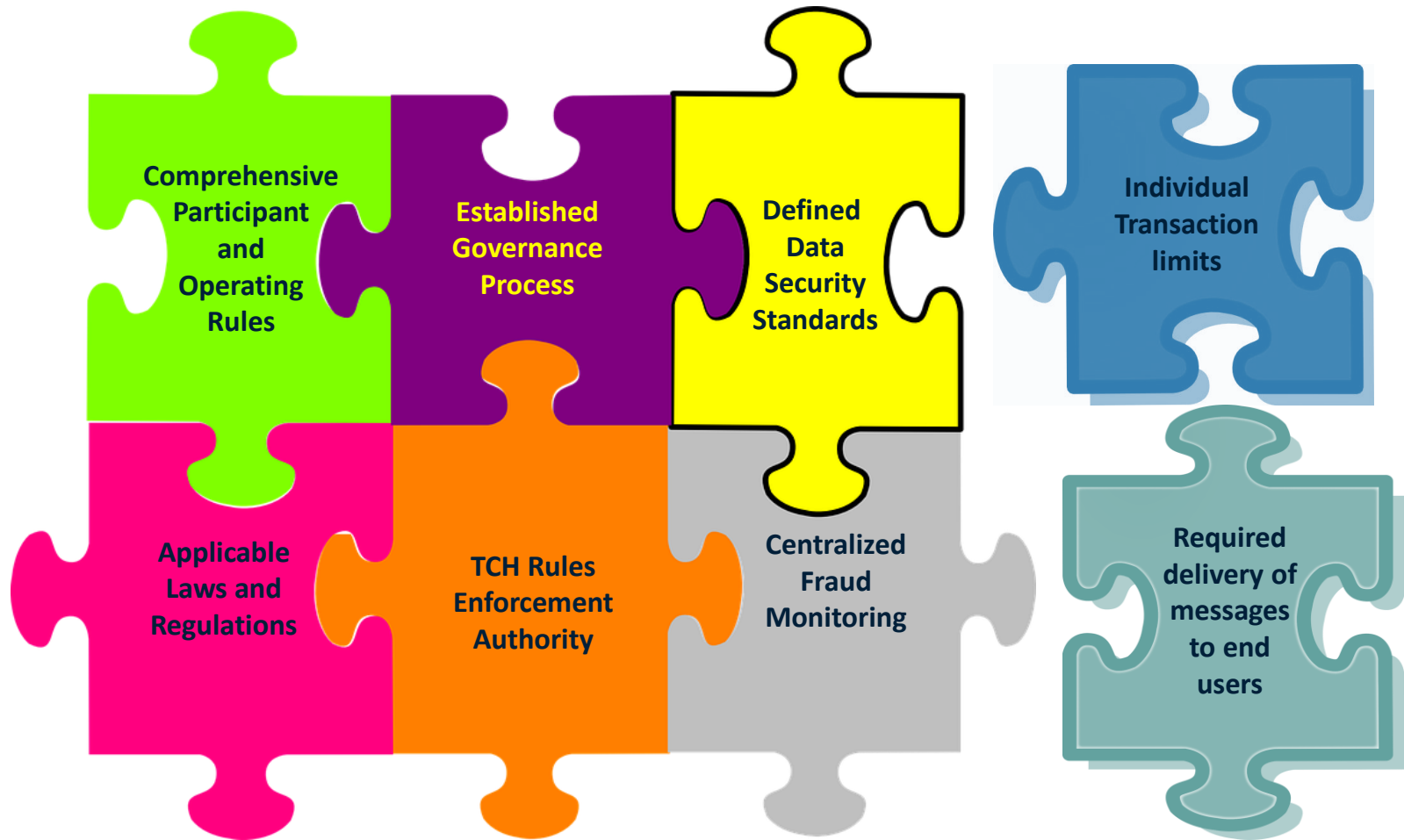


Invoice / Remittance Advice

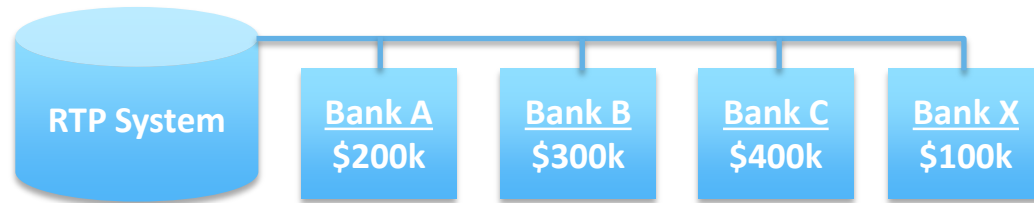
Extensive invoice/remittance detail not included in the Request for Payment/Credit Transfer message



RTP Operating Rules and system controls support a secure, consistent and predictable bank and user experience



Faster payments call for new settlement models that eliminate the risk of settlement failure (RTP example)

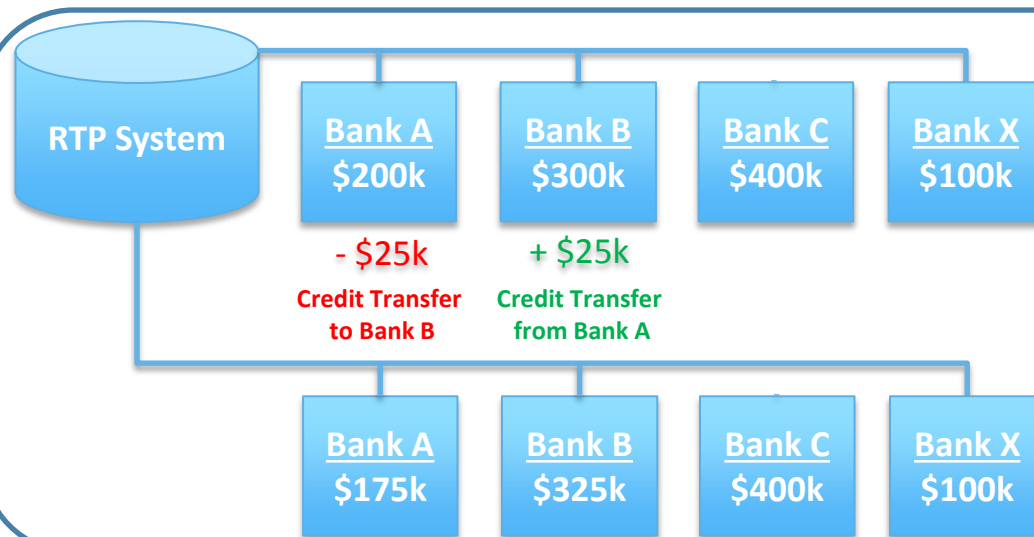


- Balances are allocated to each Participant settlement position
- Debtor FI position is verified for each Credit Transfer
- Positions update in real-time on completion of each Credit Transfer
- The system does not “queue” any transactions to wait for liquidity

RTP Settlement Account

Total Balance = \$1 M

Balance only changes upon Participant or Agent Supplemental Funding via Fedwire or TCH disbursement to Participant via Fedwire upon Participant request for a Drawdown.



EXAMPLE: \$25,000 credit transfer

RTP Settlement Account

Total Balance = \$1 M

Total Balance in Settlement Account Unchanged



Benefits of faster payments for consumers

Faster payments provide significant benefits to consumers

- Increased control over payments from their accounts
- New bill payment options that reduce late payments
- Added certainty regarding when transactions will post
- Immediate notifications
- Faster access to funds



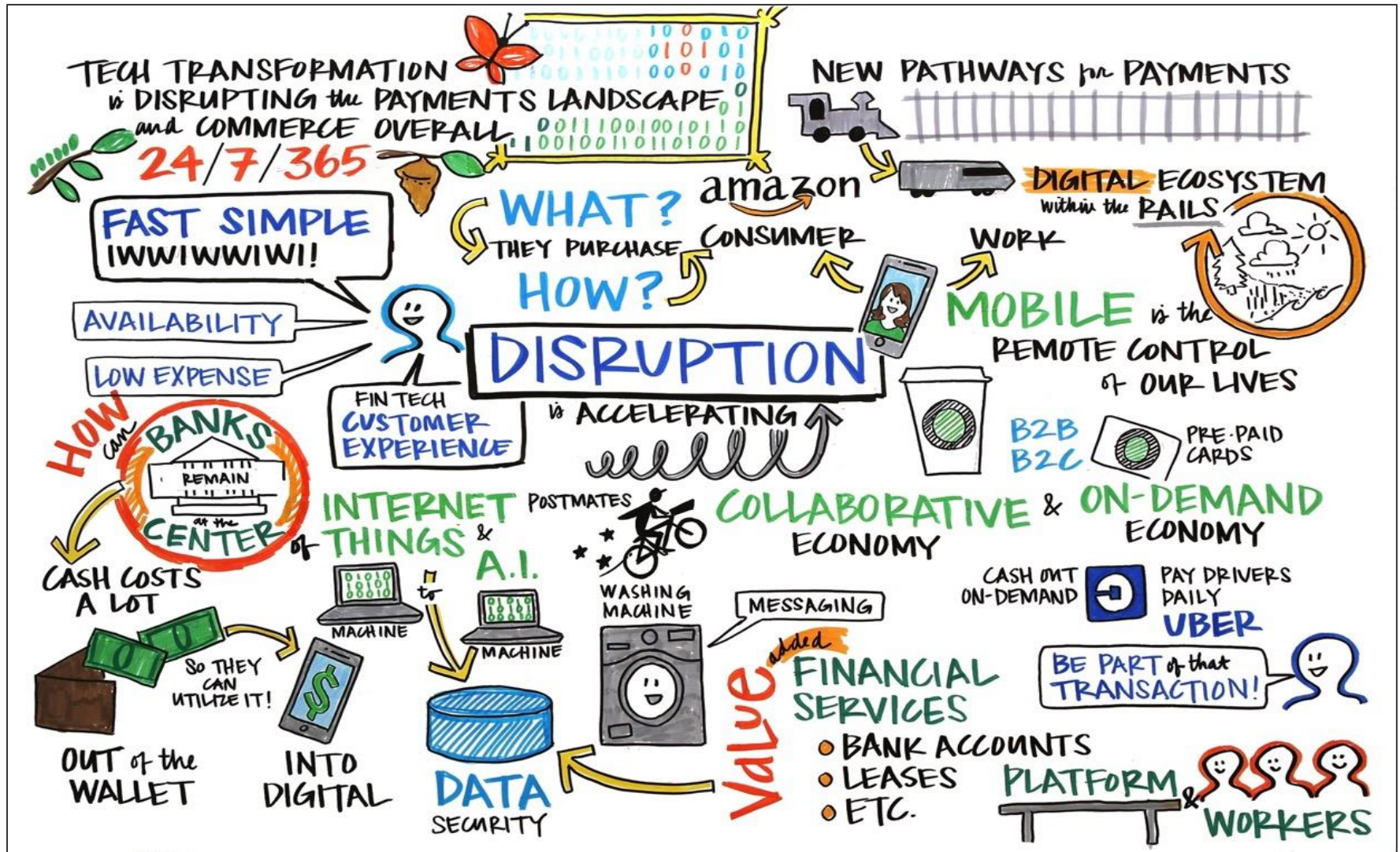
Benefits of faster payments for business

Faster payments address many of the pain points in business payments

		Key Real Time Payments Features					
		Credit Push	Robust messaging / ISO 20022	Request for Payment	24x7 clearing and continuous settlement	Payment Certainty	Real Time Posting and Availability
Key Business Payments Pain Points	Invoice Management		X	X		X	X
	Manual processes and reconciliation		X			X	X
	Liquidity and cash flow	X		X	X	X	X
	Data security	X	X	X			



The real benefit of faster payments will come from innovative products and services



Sample Payment Opportunities

Business to Business (B2B)



A **small business** paying an urgent invoice in order to receive goods or services



A **restaurateur** who pays for farm-fresh produce from the local farmer to serve that evening's dinner specials

Business to Consumer (B2C)



A **utility company** requesting payment for services from a business or consumer



A **retail bank** distributing personal loan proceeds to a dealership on behalf of a customer who is at the showroom buying a new car



An **insurance company** adjustor reviewing a claim, determining a settlement amount, and immediately providing funds to the policy holder



A **small business owner** who is paying temporary employee salaries or tips on an ad hoc basis



A **large corporation** paying employees for travel expenses in time for payment of corporate credit cards

Consumer to Business (C2B)



A **busy working individual** paying for general services around the house such as the gardener, cleaning services, or child care provider



The **individual investor** taking advantage of market movement, therefore at less disadvantage to professional or institutional traders.

Person to Person (P2P)



College roommates splitting monthly rent and utility payments



A **head of household** sending emergency funds to a family member on vacation



