The U.S. Path to Faster Payments

FINAL REPORT PART TWO:
A CALL TO ACTION

FASTER PAYMENTS TASK FORCE

JULY 2017 • PART 2

PREFACE

The Faster Payments Task Force (task force) is a broad and inclusive group of stakeholders with representatives from organizations across the payments community, including financial institutions, nonbank payment providers, businesses (merchants and corporates), consumer groups, federal and state government agencies, regulators, standards bodies, industry trade organizations, consultants, and academics. Acting as a catalyst, the Federal Reserve convened these payments stakeholders to work collaboratively to identify and assess alternative approaches to implementing safe, ubiquitous, faster payments capabilities in the United States. The task force has concluded its work of reviewing faster payments solution proposals, considering challenges and opportunities associated with advancing faster payments in the United States,

developing recommendations, and issuing a call to action to the payments community. This Faster Payments Task Force Final Report Part Two presents a roadmap for achieving safe, ubiquitous, faster payments that encourages competition among a variety of solutions, as opposed to endorsing a single approach. It provides insights from the proposals, considers foundational issues requiring collaborative action, and recommends measures necessary for achieving a faster payments system. While this report reflects the broader task force's analysis and collective views, the statements contained in this report do not necessarily reflect specific positions of any given task force participant.

This report is a product of the task force and does not reflect the official views or positions of the Federal Reserve System.

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VISION

The Faster Payments Task Force calls upon all stakeholders to seize this historic opportunity to realize the vision for a payment system in the United States that is faster, ubiquitous, broadly inclusive, safe, highly secure, and efficient by 2020. This report provides the roadmap.

The payment system is critical to the economic vitality and competitiveness of the United States and must continually evolve to meet the needs of an economy that is becoming more global, digitally-interconnected, real-time and information-driven. The Faster Payments Task Force (task force) believes the United States must leverage new technologies and new paradigms around speed, security and efficiency to create a better payment system: one that is faster, ubiquitous, broadly inclusive, safe, highly secure, and efficient.

This vision can be realized through collaboration among all stakeholders, including competing faster payments solution operators, payment service providers, end users, and others. Achieving the vision will be enabled by *ubiquitous receipt* – where all payment service providers are capable of receiving faster payments and making those funds available to customers in real time.

In this report the term "faster payments system" refers to a payment system in which competing solutions interoperate to meet the Effectiveness Criteria and deliver the envisioned characteristics noted above (see Box A for definitions of additional terms). This faster payments system can deliver broad benefits to American consumers, businesses, and government agencies through enhanced security and fraud prevention, and seamless end-to-end payments. In addition, the envisioned faster payments system ultimately will address unmet needs for efficient cross-border payments and effective, accessible options for unbanked and underserved end users. Likewise, it will benefit businesses and government agencies by delivering real-time, data-rich payments that enable straight-through transaction processing from the point of invoice generation to final reconciliation.[1]

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[1] In this report, "data-rich" refers to information about the underlying transaction(s) including information that supports accounting and reconciliation processes.

CHALLENGES

With visionary change comes significant challenge. The faster payments system envisioned by the task force requires broad adoption by service providers and end users. Several faster payments solutions are already in the marketplace and more are expected to emerge. Nevertheless, service providers and end users will see little or no value if required to invest in or use multiple solutions to reach a large number of other end users. While the eventual number of solutions in the market cannot be predicted, it is desirable to broaden the reach of all solutions by enabling faster payments transactions to cross between them. Technical and business process issues can inhibit this interoperability. In addition, solutions may have different rules, policies, and functionality resulting in variations and ambiguity in the end-user experience. Security is also of paramount concern. When multiple solution operators pass payments and share information, a security weakness in any one solution makes the system as a whole more vulnerable.

Globally, a number of countries have addressed these challenges through mandates and/or the development of a national faster payments system with a single operator. In contrast, the United States is taking a market-driven approach to payment system innovation that avoids government mandates. This approach relies upon multiple solution operators and other stakeholders voluntarily collaborating to address these challenges. While broad collaboration can be difficult to achieve given competing interests of solution operators, service providers and end users, the task force believes its efforts demonstrate that such pro-competitive, voluntary collaboration is possible and can serve as the foundation for the work that lies ahead.

THE PATH FORWARD

Since its inception in June 2015, the task force has served as a unique example of the industry coming together to shine a spotlight on the need for faster payments and to foster its evolution. Specifically, the task force has influenced product strategies and developments in the broader marketplace by defining Effectiveness Criteria, showcasing faster payments capabilities, and driving a process for bringing faster payments solutions forward for task force feedback.[2] To maintain this momentum, the task force recommends ongoing collaboration to develop a faster payments system in the United States that fulfills its vision, with work beginning in three key areas: **Governance and Regulation, Infrastructure** and **Sustainability and Evolution.**

GOVERNANCE AND REGULATION

First, the task force believes there must be a framework for ongoing collaboration, decision making, and rule setting. This includes three specific activities:

- Establishing a formal governance framework;
- Establishing rules, standards, and a baseline set of requirements for the faster payments system that would enable payments to cross solutions securely and reliably, and ensure end users have predictability and transparency in certain key features pertaining to timing, fees, error resolution and liability; and

- Evaluating laws and regulations affecting payments and payment service providers to ensure that they are suited to the unique characteristics of real-time payments.

INFRASTRUCTURE

Second, the task force recommends enabling needed infrastructure to support faster payments. This includes:

- Developing a design for faster payments solutions to interoperate via directory services;
- Requesting the Federal Reserve develop a 24x7x365 settlement service; and

- Requesting the Federal Reserve explore and assess other operational role(s) the Federal Reserve might need to play to support ubiquity, competition, and equitable access to faster payments.

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[2] See Faster Payments Task Force, Faster Payments Effectiveness Criteria, (January 2016), FasterPaymentsTaskForce.org.

SUSTAINABILITY AND EVOLUTION

Third, the task force recommends that the faster payments system in the United States be future-focused and able to address evolving security threats, meet changing end-user needs, and foster continuous innovation through new technologies. This requires an ability to monitor progress and take action toward achievement of the task force vision, including by addressing identified gaps and pursuing opportunities to broaden end-user participation. This encompasses a variety of activities, including:

- Developing methods for fraud detection, reporting, and information sharing to continuously advance the safety and security of the faster payments system;

- Creating advocacy and education programs to support broad adoption;

- Researching cross-border payments to identify and address gaps and barriers to enabling faster payments for this use case; and

- Continuing research on emerging technologies to deepen understanding of the risks they may pose as well as the benefits they may offer, including the potential for serving underserved end users and use cases.

CALL TO ACTION

This report represents the collective thought and effort of 300-plus individuals from all corners of the payments industry. These participants collaborated for two years to serve the public interest and improve the payment system for everyone. With this report, the Faster Payments Task Force issues a **call to action** to all payments stakeholders. Whether you are an end user or a financial services innovator, and whether you have participated in the effort to date or not, we are calling on all of you to come together to make this faster payments vision a reality. We ask you to support this effort by:

- Embracing and promoting the vision and the Effectiveness Criteria;

- Actively participating in the ongoing dialogue;

- Contributing to work group efforts and deliverables; and

- Taking steps to make your own organization *faster payments ready* by 2020.

- To join in the next phase of this ground-breaking work, visit FasterPaymentsTaskForce.org.

BACKGROUND

[Part One of the Faster Payments Task Force Final Report](#), published in January 2017, provides an overview of the Faster Payments Task Force objectives and processes, a description of the U.S. payments landscape, and the benefits of faster payments.[3] Part Two of the Final Report provides insights from the submitted solution proposals, reflects on several foundational issues that are important to address, and presents the task force's goals and recommendations for implementing faster payments in the United States.

The task force was created with the mission to "identify effective approach(es) for implementing a safe, ubiquitous, faster payments capability in the United States."[4] Consistent with this purpose, the task force developed an aspirational and comprehensive set of Effectiveness Criteria describing attributes and expectations of effective faster payments solutions in terms of ubiquity, efficiency, safety and security, speed, and legal and governance frameworks. Rather than selecting a "winner(s)," the task force designed a process for "lifting all boats," by assessing solution proposals against the Effectiveness Criteria and enabling those proposers to refine their solutions.

In addition to assessing faster payments solution proposals, the task force established a Challenges and Opportunities Work Group to consider potential barriers and gaps that might impede implementation of faster payments. Sub work groups conducted foundational research based on the current payments environment and the proposal landscape, and gathered task force segment perspectives to inform collective thinking on potential challenges and the recommendations for addressing them. Through this process, the task force sought to incorporate the views of all payments stakeholders to ensure broad adoption, draw underserved users into the financial mainstream, and enable the United States to keep pace with other countries that have already moved to a faster payments system.

The remainder of this report provides: an overview of the faster payments solution proposal process and summary insights from the proposals, a description of the task force's vision for faster payments, the foundational issues that require ongoing collaboration, and the task force's recommendations to address those challenges and realize the task force vision.

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[3] Faster Payments Task Force, *The U.S. Path to Faster Payments, Final Report Part One: The Faster Payments Task Force Approach*, (January 2017), FasterPaymentsTaskForce.org.

[4] See Federal Reserve System (2015), "[Strategies for Improving the U.S. Payment System](#)," (Washington: Board of Governors and Federal Reserve System, January 2015), FasterPaymentsTaskForce.org.

BOX A: THE FASTER PAYMENTS SYSTEM, ECOSYSTEM, AND PARTICIPANTS, DEFINED

The task force defines **faster payments system** as a payments system that is faster, ubiquitous, broadly inclusive, safe, highly secure, and efficient, and is delivered through interoperation among multiple, competing solution operators and service providers.

The task force defines the **faster payments ecosystem** as an interdependent economic community that includes all entities providing faster payments solutions, as well as end users of those solutions.

Entities referred to in this Final Report include:

End Users – Include consumers, businesses, government agencies and other payers / payees that use faster payments solutions to make and receive payments.

Provider Participants – Include various entities divided into three groups according to the role they play. In some instances, a provider participant can belong to more than one group if it plays multiple roles:

- **End-User Service Providers (Service Providers)** – Entities that participate in one or more faster payments solution(s) in order to serve the faster payment needs of their end-user customers. These may include depository institutions and regulated nonbank account service providers, among others.
- **Solution Operators** – Entities that operate faster payments solutions. Some solution operators may also function as service providers by offering services directly to end users, while others may offer their solutions to service providers, who, in turn, offer services to end users.
- **Payment Processors** – Entities that provide core transaction processing services to financial institutions and businesses.

There are a host of other entities that serve as enablers of faster payments solutions by offering various services to support the effective operation / usability of faster payments solutions, including, for example, security services, directory services, settlement services, and/or technology providers among others.

For further clarification of terms, see the Glossary of Terms posted at www.fedpaymentsimprovement.org.

INSIGHTS FROM FASTER PAYMENTS SOLUTION PROPOSALS

In early 2016, the task force solicited proposals for end-to-end faster payments solutions that could address the need for safe, ubiquitous, faster payments. Seeking to address potential conflicts of interest, as well as concerns that all task force participants might not be qualified to assess the proposals, the task force recommended establishing an external Qualified Independent Assessment Team (QIAT) to conduct objective proposal assessments. On behalf of the task force, the Federal Reserve selected McKinsey & Company to conduct a comprehensive assessment of each solution against the task force's Effectiveness Criteria. Rather than ranking proposals or endorsing any particular solution(s), the assessment process was designed to make all solutions better by enabling each of the proposers to iteratively refine and improve their proposals.

The QIAT reviewed 22 proposals and 19 proposers opted to continue the process of task force review. For this review task force participants provided solution-enriching feedback on their proposals and the QIAT assessments, as well as overall feedback on the process. After receiving comments from the full task force, 16 solution proposers decided to release their proposals to the general public. These proposals and assessments provided important input for this report's development. Table 1 uses language from the proposers' summaries to briefly describe these proposals, their scope, and how they approach delivering faster payments capabilities; these descriptions do not necessarily represent the views of the task force. The full description and details about each proposal can be accessed via the hyperlink embedded in the proposer's name. In addition, all the proposals and assessments can be accessed at FasterPaymentsTaskForce.org.

TABLE 1: FASTER PAYMENTS SOLUTION PROPOSALS – OVERVIEW OF PROPOSER DESCRIPTIONS

The Proposals provided below and any attached links are provided at the sole discretion of each proposer(s), and are the property of that proposer(s). One or more U.S. patents may cover aspects of these proposals. Neither the Federal Reserve Banks, the Federal Reserve Board, nor the Faster Payments Task Force make any representations regarding the ownership of any intellectual property contained in these proposals, and any person or entity seeking to use part or all of these proposals should secure the appropriate licenses. Neither the Federal Reserve Banks, the Federal Reserve Board, nor the Faster Payments Task Force make any warranty, express or implied, nor assume any liability or responsibility for the contents of any proposal or links provided by any proposer.

Please note that any links provided are provided voluntarily at the discretion of each proposer, and not all proposers chose to provide a link. Content on any linked third party website is not verified for completeness or accuracy by the Federal Reserve Banks or the Federal Reserve Board, and the Federal Reserve Banks and the Federal Reserve Board have no obligation to monitor these third party links for updates or ongoing accuracy. Nothing regarding these proposals nor the inclusion or exclusion of any link, should be read to imply any endorsement or recommendation by the Federal Reserve Banks, the Federal Reserve Board, or the Faster Payments Task Force.

TABLE 1: FASTER PAYMENTS SOLUTION PROPOSALS

PROPOSER	DESCRIPTION
DWOLLA, INC.	Description: Real-time transfer solution features 24x7x365 credit-push operations, defines responsibilities by participant, is interoperable with other solutions. Scope: Comprehensive end-to-end faster payment solution that provides models for directory, application program interface (API) accessibility, and variable credit push requests. Approach: Facilitates competition through modern means of access (i.e., APIs) and end-user ability to choose among providers, use multiple accounts, and specify payment preferences.
HUB CULTURE, ECCHO, XALGORITHMS	Description: Distributed Ledger Technology-like solution with a Real-time Asset Interchange Network (RAIN) and Real-time Asset Interchange Ledger (RAIL) to enable end-to-end global payment transactions. Scope: Comprehensive end-to-end faster payment solution. Approach: Includes a Unique Synchronized Identity (USI) to link existing accounts with the potential to lower transaction costs and platform outlays and to reduce time to deploy across the network supporting push and pull payments.
INTERCOMPUTER CORPORATION	Description: Real-time payments system with multi-layer security features messaged on private internet channel without using Web protocols. Utilizes expedient 3-factor authentication. Payments fully insured by underwriting. Scope: Comprehensive, end-to-end, hosted/distributed payment solution for all computing devices eliminating web cybercrime. Approach: Allows for users to set up a hierarchy of accounts and uses APIs to interface with other customer financial systems (e.g., treasury management).

FASTER PAYMENTS SOLUTION PROPOSALS

PROPOSER	DESCRIPTION
KALYPTON GROUP LIMITED AND ECCHO	Description: Full transaction processing engine, not just payments, delivering blockchain-like functionality without its limitations, through distributed authentication of private ledgers for real-time account-to-account transactions. Scope: Comprehensive end-to-end faster payments solution that supports both bank and nonbank providers. Approach: Incorporates a configurable service layer that implements multiple use cases and supports rapid, ongoing innovation by service providers.
MOBILE MONEY CORP.	Description: Cash-based, closed-loop solution using MoMo accounts to process banking transactions including faster payments. Scope: Targeted to serve the unbanked, underbanked and some banked. Approach: Relies on network of bank and nonbank agents that register end users and provide cash-in and cash-out capabilities.
NANOPAY CORPORATION	Description: Direct, collateralized bearer asset transfer system that enables immediate settlement when sending money and other assets between users. Scope: Closed-loop faster payment system using digital currency with easy integration via ISO 20022 and open APIs. Approach: Enables end users to switch among providers enabling competition, has redundancy in operating design.
NORTH AMERICAN BANKING COMPANY AND INDEPENDENT COMMUNITY BANKERS OF AMERICA	Description: Provides front-end to the ACH leveraging same-day credit push for payment transactions through their All Payments App and a Directory for mapping to individual bank accounts. Scope: Solution facilitates same-day transactions through the ACH network. Approach: Immediately achieves ubiquity (among banks) and is cost effective through use of existing ACH platforms, standards, rules and record formats.
RIPPLE	Description: Leverages distributed financial technology to enable real-time cross-border payments for financial institutions that join their network. Scope: Uses Interledger to enable real-time cross-border payments and interoperability between systems. Approach: Allows for originators to see total cost of payment and real-time tracking for low- and high-value payments.

FASTER PAYMENTS SOLUTION PROPOSALS

PROPOSER	DESCRIPTION
SHAZAM, INC.	<u>Description</u>: Develops case for universal sharing of information and equitable participation among debit networks and creates a governance model to process faster payments. <u>Scope</u>: Enables movement of debit or credit message transactions between bank deposit accounts in real time. <u>Approach</u>: Achieves ubiquity by leveraging the debit card networks and eliminates need for a directory by routing transactions through account token prefixes.
SWAPSTECH	<u>Description</u>: Enables individuals, businesses and merchants to use ZillPay, a domestic and global payment network, to make secure, fast and convenient payments, using alias directory. <u>Scope</u>: Addresses practice of current payment networks and financial systems allowing account numbers to be shared with third parties, leaving the accounts open to fraudsters. <u>Approach</u>: Uses universally accepted payment address, UPA, to ensure the account remains private, and there is no sharing of account numbers for any payment.
THE CLEARING HOUSE AND FIS	<u>Description</u>: A real-time payment solution for all financial institutions based on internationally tested solutions and established structures to enable account-to-account real-time credit push payments at all U.S. depository financial institutions. <u>Scope</u>: Comprehensive end-to-end faster payment solution. <u>Approach</u>: Operates 24x7x365 and leverages the safety and security features of existing bank channels and risk management controls.
THOUGHT MATRIX CONSULTING, LLC	<u>Description</u>: A central bank issued electronic currency, Money Modules (MM), based on blockchain technology that features standardized software, data modules and electronic wallets. <u>Scope</u>: Closed-loop faster payment system using digital currency. <u>Approach</u>: Addresses all use cases including the unbanked and offers customizable and configurable features for providers and end users.
TOKEN, INC.	<u>Description</u>: Provides a set of software and service components that enables payers to make direct push and pre-authorized pull payments using digital tokens for depository institutions and nonbank financial service providers. <u>Scope</u>: Comprehensive end-to-end faster payment solution. <u>Approach</u>: Uses security that protects end-user data and reduces payment risk with digital signatures and certificates to authenticate and authorize each transaction.

UNIVERSITY BANK	<u>Description</u>: PayThat is a closed loop real-time payment system providing superior privacy and security while significantly lowering transaction costs. <u>Scope</u>: Comprehensive "real-time" highly secure payment system that interoperates with existing bank systems. <u>Approach</u>: Leverages email and texting to send and receive good-funds transactions and describes four business models of detailed value added services to speed adoption and enhance the Faster Payments business case.
WINGCASH	<u>Description</u>: A software platform that would be owned and operated by the Federal Reserve and the Governing Organization. The Federal Reserve would issue digital currency (digital Fed notes) and is tied to the Internet domain (Fednotes.com). <u>Scope</u>: Faster payment system using Federal Reserve-issued digital currency. <u>Approach</u>: Allows businesses to issue and define the characteristics (i.e., name, redemption) of digital brand cash.
WORLD CURRENCY USA, INC.	<u>Description</u>: Allows financial institutions, using FAST solution, to connect through a web-based front-end platform and to clear/settle payments through FAST clearing accounts. Separate platform allows users to initiate and view their transactions in real time. <u>Scope</u>: Comprehensive end-to-end faster payment solution. <u>Approach</u>: The solution proposes to consolidate domestic ACH and wire payments into a single payments solution for domestic and cross-border payments.

The feedback mechanisms built into the proposal assessment process prompted solution proposers to revisit and revise elements of their proposals to make them more responsive to the needs of diverse stakeholders and more consistent with the Effectiveness Criteria. As a result, the proposals incorporate the task force's combined richness of thought and reflection. Through this process, the task force gained a better grasp on the complexity of implementing a faster payments system and learned there are a variety of ways to address the associated issues.

Collectively, the proposals represent a broad universe of creative and innovative ways to deliver faster payments, including solutions that work in similar ways to those in the market today, as well as conceptual solutions that would leverage the latest, most cutting-edge thinking and technology. Some proposals are structured like legacy payment systems that use a centralized clearing and settlement mechanism while others focus on distributed networks. Furthermore, some are based on traditional assets held in transaction accounts, while others depend on new asset forms like digital currencies. The proposals also reflect diversity in scope. While some proposals introduce new end-to-end payment processes, others focus on particular parts or components of the payment process. In some instances, proposals address specific use cases. The proposals represent solutions at different stages of development and implementation; some are conceptual, others are in active development, and several are in pilot or already available in the market.

As described by the QIAT in Appendix 1, the proposals are generally strong across a number of key areas emphasized in the Effectiveness Criteria. Most visibly, the proposals demonstrate true potential for increasing the speed of transactions. Nearly all of the solutions describe technologies

that meet the speed criteria, especially with respect to approval, clearing, funds availability, and visibility of payment status. Some proposals also chart a way forward for payment safety and security, employing a variety of approaches for payer authorization, fraud prevention, data encryption, and use of aliases. Many emphasize efficiency, taking advantage of real-time messaging approaches that could reduce cost, improve security, and facilitate cross-border transactions. Similarly, many proposals describe application program interfaces (APIs) that could enable third parties to develop efficiency-enhancing, value-added services. Proposals also recognize the need for ubiquitous access; most solutions would be accessible to a variety of end users by supporting payments to and from accounts at depository institutions and regulated nonbank account providers.

The proposals also expose a common set of challenges. While a few proposals concretely describe the rules the solution would be subject to and how its rules would be developed, most do not. More broadly, many proposals recognize the need for an inclusive governance process without suggesting a path forward. Only a few proposals provide strong solutions for the unbanked or consumers who lack smartphone access or technical savvy – namely, low income individuals and the elderly. Finally,

the proposals display a variety of weaknesses with respect to safety and security – many proposals provide only limited detail on risks related to settlement, dispute and fraud resolution processes, fraud information sharing, and business continuity. In addition, most proposals focus on technical security, but only a few explain associated risk-based operational and managerial controls. However, given proposers' demonstrated willingness to respond to feedback and refine their solutions, the task force expects many of these gaps will ultimately be addressed.

The proposals on the whole represent a significant step forward on the path to making the U.S. payment system not only *faster* but *better*, by shifting the paradigms around payment speed, safety, and efficiency. Enhanced techniques of digital identification, secure messaging, and strong authentication offer promise for reducing the potential for security breaches and fraudulent activities. Designs that shorten the end-to-end payments path (e.g. , fewer hops, fewer nodes) also create opportunity for greatly improving efficiency. By highlighting the possibilities for realizing fulfillment of the task force's Effectiveness Criteria, the proposals also help illustrate the task force's vision for a better payments system for the United States.

THE TASK FORCE VISION

The task force calls upon all stakeholders to seize this historic opportunity to realize the vision for a payment system in the United States that is faster, ubiquitous, broadly inclusive, safe, highly secure, and efficient by 2020.

The envisioned faster payments system comprises the following characteristics:

- **Fast**: end users have fast access to funds, in speeds approaching real time ("Speed" Effectiveness Criteria)

- **Ubiquitous and broadly inclusive**: end users can reach any other end user, including unbanked, underserved and cross-border end users, regardless of the solution they use ("Ubiquity" Effectiveness Criteria)

- **Safe and Secure**: end users have confidence and trust in the safety and security of the system, knowing fraud and errors are minimized and resolved quickly, and their assets, accounts, and information are protected, even as their payments cross solutions ("Safety and Security," "Legal" and "Governance" Effectiveness Criteria)

- **Efficient**: end users benefit from an efficient interoperable network of solutions and transparency in features and fees, and can send and receive payments 24x7x365 ("Efficiency" Effectiveness Criteria)

The benefits of faster, modernized payments are significant. For consumers, faster transactions support quicker access to funds and the ability to make and receive last-minute payments – a key benefit particularly for those with limited or unpredictable income streams. For business and government end users, improving payment speed provides quicker access to working capital to support greater efficiency in the supply chain and inventory management. By seamlessly integrating data-rich contextual information throughout the entire payment flow – from initiation through reconciliation – business and government end users will realize further efficiencies in cash-flow management and back-office processes.[5] Through faster payments, providers of financial and payments services can better address the needs and expectations of end users in a changing global economy. Also, a system that leverages leading-edge security, technology, and risk-management practices enables faster, more flexible responses to a changing threat environment and engenders trust and confidence in faster payments. Finally, investment in faster payments will speed modernization of supporting legacy payment and accounting systems, which can further enhance security and better support the evolving needs of a digital economy.

To achieve the vision, the task force identified a number of challenges that must be addressed, as discussed in the next section.

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[5] It should be noted that providing data-rich contextual information along with a transaction is not unique to faster payments. ACH, for example, provides a capability to include voluminous, contextual information about a transaction with the related payment; however, transactions are not in real time.

FOUNDATIONAL ISSUES REQUIRING ONGOING INDUSTRY COLLABORATION

The United States has yet to realize real-time, ubiquitous, end-to-end electronic payments that embrace the full capability of today's information technology and telecommunications network connectivity. Achieving ubiquity of faster, secure payments has been challenging because infrastructure needed for completing an end-to-end payment – from initiation to settlement and reconciliation – in real time is substantial. In addition, market competition and brand differentiation can stand in the way of developing this infrastructure.

A number of countries have addressed these challenges through a mandate and/or the development of a national faster payments system with a single operator. In contrast, the task force believes that competition among individual solution operators and service providers that are guided by their efforts to fully meet the Effectiveness Criteria should be the driving force in determining the ultimate contours of faster payments capabilities in the United States. In addition, achieving ubiquity will depend on pro-competitive collaboration across current and future solution operators, including those that did and did not participate in the task force proposal process.

At this juncture, the U.S. payment system continues to evolve at a rapid pace. Innovations in the card space now facilitate real-time person-to-person transfers via credit push. Many fintech and social media entities are delivering payment services with some real-time attributes through stored value or card-on-file models, and the payments industry is exploring models that leverage digital currency and distributed ledger technologies. In addition, each of the proposed solutions is at a different stage of readiness to enter the market and will face competition from these other solutions. Merely having an array of options with certain faster payments characteristics, however, does not necessarily mean that the vision for a faster payments system will be achieved.

The task force believes that achieving the desired faster payments system means fostering competition in a way that enables innovative solutions to enter the market and encourages all solutions to fully incorporate the Effectiveness Criteria. This, in turn, requires that four primary cross-solution foundational issues are addressed in a collaborative way.

A key issue is **Broad Adoption**. A large population of consumers, businesses, and government agencies will need to have knowledge of, access to, and the motivation to use faster payments. Solution operators and service providers will need incentive to 1) develop and deliver faster payments solutions / services that meet the Effectiveness Criteria, and 2) participate in an ecosystem that enables interoperability among competing solutions. In a multi-solution environment, achieving Broad Adoption is particularly challenging and will depend on addressing three other foundational issues:

For end users who may be using different solutions, there must be a level of **Safety, Integrity, and Trust** across solutions such that end users and individual service providers are willing to allow payments originated in other solutions to traverse to their solutions.

In addition, there is a need for **Interoperability**, or a mechanism for enabling each solution to identify and communicate with other solutions, and complete transactions on behalf of the end users they serve.

Finally, faster payments solutions will need a supporting **Ecosystem** that provides a trusted framework to facilitate collaboration and inclusive decision making across solutions and stakeholder communities. This ecosystem should enable financial institutions and nonbank service providers of all sizes to participate and deliver faster payments by fostering competitive fairness, continued innovation, and flexibility to take advantage of emerging technologies. The task force believes that its collaboration efforts can serve as a foundation to address these issues.

Each of these foundational issues is discussed in more detail below.

BROAD ADOPTION

In moving toward ubiquitous faster payments, the United States faces challenges in driving adoption because the value of new payment solutions to any given end user depends, among other things, on getting to a critical mass of other end users. Driving end-user adoption will be a multi-year, multi-dimensional challenge that service providers and the ecosystem at large will need to address.

Service providers will play an important role in advancing broad adoption by ensuring end-user access. However, their decision to participate in faster payments will depend on their assessment of the value proposition. This includes the potential benefits of customer attraction and retention, and value-added benefits from upgrading account processing systems, security practices, and technologies. It also includes consideration of participation costs, some of which may be difficult to anticipate and quantify. These evaluations are further complicated by uncertainty around overall end-user adoption rates.

When determining which faster payments solution(s) to adopt, a key consideration for service providers is whether a given solution enables their business, government, and consumer customers to send and receive payments from as many end users as possible, including the millions of consumers who do not have an account at a financial institution. In this regard, participation by regulated nonbank account providers may be critical.[6] Additionally, solutions will need to provide for cross-border payments, which, in an increasingly global economy, are rapidly becoming more critical. These end users remain less well served in the market due to the technical, legal and regulatory complexities that arise from payments flowing across national borders.

Other things being equal, a solution that has broad reach will be more attractive to service providers than solutions that have limited reach. While service providers could invest in multiple solutions to expand reach, this is likely to be prohibitively expensive. Moreover, payment

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[6] Regulated nonbank account providers include money services businesses and broker-dealers subject to federal or state regulation.

processors' decisions about which solutions to support will have a significant impact on smaller service providers' participation, particularly if access to solutions not supported by those processors comes with significant customization costs. This can result in a vicious circle that diminishes the potential reach and attractiveness of all faster payments solutions.

However, this circle can become virtuous if: 1) solutions can interoperate; and 2) service providers can, at a minimum, receive and post faster payments on behalf of their customers. Interoperability across solutions broadens reach and reduces the cost to service providers of offering faster payments to their customers. In addition, having access to a broad base of potential payees encourages payers and their service providers to adopt and use faster payments because they will be able to use faster payments for a greater share of their transactions. Enabling such "ubiquitous receipt" requires that all service providers are able to at least *receive* and post faster payments on behalf of their end users. For smaller financial institutions in particular, payment processors will need incentive to provide this basic functionality. Other payment systems have taken this approach of addressing the payee side first to advance broad adoption. For example, same-day ACH saw very little adoption until NACHA amended its operating rules to require receipt of same-day ACH transactions and provide compensation to all financial institutions mandated to receive the same-day ACH transactions.[7] Adoption has accelerated since the phased receipt mandate began in fall 2016.

Besides potential limited reach, there are additional challenges for end users. One such challenge is a potential lack of predictability and transparency across payment solutions for features such as transaction speed, end-user protections, liability and dispute processes for unauthorized transactions, fees, and data security and privacy approaches. End users typically enjoy a variety of choices and tailor their selections to their unique needs and preferences. If baseline features vary significantly by solution or individual provider, however, end users may be unable to predict the costs and timing of their transactions, which could diminish the value of using faster payments.

While end-user education is accomplished in today's payment environment largely through marketing efforts of service providers and solution operators, programs designed to promote broader awareness and understanding of the features and benefits of faster payments could reduce confusion and help drive adoption. As a result, there may be merit in developing, coordinating, and delivering broad awareness and education programs to help end users understand faster payments and the benefits of using faster payments. An example that illustrates the potential for programs that promote broad awareness and usage is the *Go Direct®* campaign that supported migration of most federal benefit payments from checks to electronic payments.[8]

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[7] In 2010, the Federal Reserve began offering same-day ACH capability to its customers as part of an opt-in service. Adoption of the service over the next several years was limited, with fewer than 100 financial institutions ultimately choosing to participate. In 2016, an amendment to the NACHA Operating Rules established ubiquity of a same-day ACH service among financial institutions and allowed more useful products to be offered to end users. In early 2017, NACHA reported that financial institutions were seeing businesses of all sizes using same-day ACH and that the volume of same-day ACH transactions met early expectations. "Same Day ACH: What Are Financial Institutions Saying?," February, 2017; resourcecenter.nacha.org

[8] The *Go Direct®* campaign was initiated in 2005 by the U.S. Treasury and the Federal Reserve Banks to encourage recipients of federal benefit checks to switch to electronic payments to receive their benefit payments. The campaign reached out to benefit recipients through trusted people and organizations, such as financial institutions and community-based organizations, to promote the benefits of using electronic payments and made it simple and easy for recipients to get signed up. In 2013, a requirement that all federal benefit payments be made electronically was implemented.

SAFETY, INTEGRITY, AND TRUST

Trust in the safety, security, and integrity of the faster payments system is important for encouraging service providers and solution operators to participate in the system, and for end users to adopt faster payments. All payment systems, whether faster or not, are subject to a wide array of security threats and other risks that are ongoing and constantly changing. Addressing these risks in an effective way encompasses several elements. Strong security is essential to protect data and transaction legitimacy, and minimize and contain data breaches, cyber-attacks, and other threats. In addition, effective processes, practices, and controls within and across solutions are integral to minimizing and mitigating fraudulent and erroneous transactions. In the event that fraudulent and/or erroneous transactions occur, it is also critical to have effective dispute resolution processes and end-user protections to safeguard against financial and other losses. Finally, effective management of settlement risk is necessary for minimizing potential losses due to one or more service provider(s) being unable to meet their settlement obligations.

The task force believes that the industry must take advantage of this period of transition. Before new, faster payments solutions are broadly adopted, the industry should embrace a security-first mentality. While it will never be possible to completely thwart ever-evolving payment security threats, implementation of these new, faster payments solutions presents a once-in-a-generation opportunity for all participants (solution operators, service providers, financial institutions, government agencies, businesses, and consumers) to embrace the latest best practices and security features in a comprehensive, holistic manner (see Box B, "Examples of Improved Security Practices").

The fact that faster payments transactions are expected to settle rapidly and irrevocably creates a number of challenges for participants in the faster payments system, regardless of whether payments stay within a single solution or cross solutions. Payer and payee service providers, solution operators and processors must exchange payment information in real time.

This means accurate identification of payers and their accounts must occur during a short vetting window, making it challenging for payers' service providers to recognize identity theft, account fraud, and account takeover. Robust techniques for data protection, authentication, enrollment, and payment identity management (e.g., end-to-end encryption, tokenization, behavioral biometrics, and device fingerprinting) can and should be leveraged to protect data and stop fraud before it happens. Effective rules and standards can help encourage proper use of these security and fraud prevention techniques.

Prevention, detection, and mitigation of fraud and security risks are also topics of interest to the Secure Payments Task Force (SPTF), a collaborative industry effort working to address payment security challenges broadly and advising this task force on faster payments-related security issues. The SPTF has a work group focused on enhancing industry information sharing for mitigating payment risk and fraud (Information Sharing Work Group). One of the key challenges they have recognized is that specific segments and trade associations within the industry collect and publish fraud information to their respective members; however, without a standardized set of requirements for defining, collecting, and formatting fraud data, the industry will continue to be challenged to accurately measure and benchmark fraud data and metrics across industry segments and payment types. To address this gap, collaboration is occurring with professional information sharing groups, trade groups, and government agencies.

It is also noteworthy that the SPTF is undertaking additional public-private collaborations beyond the Information Sharing Work Group (see Appendix 2), but these efforts have focused on addressing the challenges of existing payment systems. The task force believes supporting analogous work streams for faster payments is critical to ensure the safety and security of the emerging faster payments system.

- **Multi-factor Authentication** – Usernames and passwords alone are no longer considered sufficient for authenticating end users or transactions. Multi-factor authentication helps reduce the risk of account takeover. Some multi-factor implementations include biometric options such as thumbprints and facial scans, while others include bio-behavioral markers such as unique keystroke patterns. These and other techniques are becoming more widely available and affordable.

- **Identity Digitization** – Prior to the internet, personal identities might have been managed with a user's social security number or driver's license number. Today, some services are using digital and online identity markers to improve the security of payments. E-commerce activity, internet searches, and social media profiles are just a sample of the sources that can be used to enhance the accuracy of identifying people, validating who they are and authenticating their transactions.

- **Federated Identity Management** – Building on the concept of digital identity, multi-operator environments will benefit from an established set of rules and protocols that will link a person's electronic identity and attributes when it is stored across multiple, distinct identity management systems. Several standards organizations such as National Institute of Standards and Technology (NIST), Fast Identity Online Alliance (FIDO), Identity Assurance Framework (The Kantara Initiative), and the National Strategy for Trusted Identities in Cyberspace (NSTIC) have set the stage for development of federated identity frameworks.

- **Secure Messaging and Cryptography** – With advances in computing power and cryptographic techniques, digital certificates can be used to more securely transmit payment messages and prevent security breaches. Blockchain and distributed ledger technologies (DLT) rely on cryptographic techniques to authenticate transactions and reduce the likelihood of fraud. DLT is also making possible the use of "smart contracts" to securely execute business transactions and associated payments.

In addition to real-time information exchange, the ability to flag exceptions quickly will be necessary to ensure trust in the integrity of the faster payments system. Payment exception processing, already an enormous task, could become more difficult for e-commerce retailers, billers, government entities, processors, and financial institutions. To meet these real-time requirements, many participants will need to upgrade their technological capabilities as well as their operational and managerial controls. For example, to comply with legal obligations, U.S. depository institutions must monitor transactions for suspected fraud or other transaction activity that meets suspicious activity reporting requirements under the Bank Secrecy Act (BSA) and screen for Office of Foreign Asset Control (OFAC)-restricted transactions. As faster payments volumes grow, increased processing and settlement speed will undoubtedly add stress to safety and security screening systems. For business end users and their payment service providers, supply chain risks could increase if business processes such as risk-scoring models and enterprise resource planning systems do not adapt to a faster payments environment.

Another risk with faster payments arises from the combination of real-time funds availability and irrevocability of the payment. This provides certainty to the payees of faster payments that the funds are available for use and will not be revoked at a later date. It also means that fraudulent or erroneous transactions cannot be revoked. However, irrevocability is not the same as indisputability: end users will want to be able to dispute unauthorized and erroneous payments. To this end, consideration needs to be given to the design of payer authorization processes and strong fraud / error resolution processes. Poorly designed authorization processes can result in confusion and user errors, which could in turn lead to unauthorized payments and customer dissatisfaction. Furthermore, complex or opaque resolution processes will add to end-user frustration and create a breakdown in trust. As such, it is critically important for faster payments solutions to have clear rules and effective processes for handling disputed payments depending on whether those payments are authorized by the payer (e.g., victim-assisted fraud) or unauthorized (e.g., lost, stolen, counterfeit, account takeovers, or in some cases debit-pull arrangements that were not explicitly agreed to by the payer). In addition, guarantees and/or indemnities that protect end users from unexpected losses due to error or fraud may be necessary. To the extent that solutions allow for the possibility of insufficient funds or account overdrafts, the penalties should be clearly and explicitly communicated to end users in order to minimize inconvenience and unexpected costs.

Some of these challenges are more complex when payments cross solutions. A faster payments solution operator and its participating service providers will not want to participate in payment arrangements with other solutions that do not have strong and compatible dispute resolution processes. They also will not want to expose their network to other solutions if they do not have confidence in the security and integrity of the other solutions' network(s). A weak link in an interoperating network of multiple solutions compromises the security and integrity of all service providers in that network. Accurate assessments of security vulnerabilities are challenging given that solution operators and service providers may be unwilling to share details about their security measures. As a result, risk-averse solution operators and service providers may opt out of participating altogether. Furthermore, solutions based on digital currencies may face a particularly high hurdle in gaining the confidence of other, more traditional solution operators and service providers as well as end users, given that the regulatory requirements and end-user protections for digital currencies are not yet well defined.

The weak link concern is also applicable to settlement. Specifically, lack of trust in other service providers' ability to fulfill their settlement obligations can be a deterrent to participation in payment arrangements across faster payments solutions. Within a given

solution, operators employ a variety of tools to assess and manage the credit and liquidity risks associated with settlement, and some service providers incorporate pre-funding as a tool to manage these risks. However, when payments cross solutions, it could be more difficult to manage settlement risk. Key considerations in managing this risk include: how solution operators and service providers will be able to determine whether other solution operators and service providers are financially sound and able to fulfill their obligations; which risk mitigation measures are appropriate, such as pre-funding and capital requirements; and how solution operators should handle another operator or a provider having insufficient funds to meet financial obligations. For more information on settlement considerations, see Box C: "Settlement Considerations for Faster Payments Solutions."

BOX C: SETTLEMENT CONSIDERATIONS FOR FASTER PAYMENTS SOLUTIONS

A unique set of integrity and trust challenges arise in the settlement step of the payments process. Settlement is defined as the discharge of obligations between the service providers of the payer and payee. Settlement can be facilitated in two ways: commercial bank settlement mechanisms, where transactions are settled on the books of, or between accounts at, a private bank(s) in commercial bank money; or central bank settlement mechanisms, with funds being transferred between service providers' accounts at a Federal Reserve Bank in central bank money. Both approaches rely on the operational soundness of the settlement institution to back the financial obligations, and hence central bank settlement is often viewed as less risky.

Additional considerations for settlement arise with faster payments. Faster payments are characterized by two conditions. First, funds are available to end users in real time, which requires real-time clearing — the exchange of payment information between the payer and payee service providers. In theory, real-time settlement is not necessary as service providers can make funds available to their customers before they receive the funds themselves. However, real-time settlement can minimize the credit risk (essentially that a service provider cannot meet its settlement obligations) that arises from the lag between funds being made available to customers and when settlement takes place between service providers. The second characteristic of faster payments is that the real-time funds availability to end users is on a 24x7x365 basis. Credit risk is therefore minimized if real-time settlement also happens on a 24x7x365 basis.

The challenge for faster payments in the United States is that a real-time settlement service on a 24x7x365 basis is not available. Traditionally, some types of low-value consumer and business payments that might shift to the faster payments system have been settled at the Federal Reserve on a deferred basis on weekdays, only during East-coast business hours. In the absence of a real-time service, it is important for faster payments capabilities to develop approaches to actively manage credit risk exposures arising from any lag between funds availability to end users and settlement between service providers. Indeed, this was included as part of the task force Effectiveness Criteria.

INTEROPERABILITY

As previously discussed, enabling solutions to transmit payments to, and receive payments from, end users served by other solutions will promote broad adoption and ultimately faster payments ubiquity. Even as each solution continues to compete for market share and end users, transmission and settlement of payments across solutions will help solution operators, as well as service providers, to collectively achieve critical mass much quicker by providing a seamless and satisfying user experience. Even if only one or two faster payments solutions initially emerge, the faster payments system needs to address challenges to interoperability in order to ensure equitable access and fair competition for other solutions seeking to enter the market. For example, consistently applied technical standards, coordinated development of digital identities and alias directories, and broad access to settlement mechanisms will facilitate payments that securely traverse and settle across solutions.

Common message format and business process standards help solution operators and service providers deliver payment services with lower operational complexity and greater consistency. [9] Many of the faster payments solution proposals, as well as other existing and proposed solutions outside the task force, have adopted or are moving toward adoption of the ISO 20022 message format and business process standards. While the momentum toward these common standards is encouraging, the use of ISO 20022 alone is not sufficient to ensure interoperability because that standard allows a great amount of flexibility in implementation. For example, solution operators and service providers that implement ISO 20022 message format standards may employ various types of data elements that meet their specific use cases, and these elements may vary across different geographies or different types of users that need to interact with each other. In addition, ISO 20022 business process standards can be implemented with a degree of flexibility, resulting in, for example, varying roles and responsibilities for similar participants in different faster payment solutions. Implementing common message format and business process standards in a consistent way is needed to minimize these complexities. Doing so likely involves development of information on how standards may be translated or mapped, both for payment messages and for supplemental information that may flow with a payment message.

Interoperability also depends on being able to appropriately route payments to payees. To do so, many solutions may choose to use directories and associated routing mechanisms. Directories and routing mechanisms can exhibit a variety of characteristics and perform several functions (see Box D: "Directories and Routing Mechanisms") that may vary by use case. For example, business-to-business payments require directories and routing mechanisms that can carry more detailed remittance information than might be required for a person-to-person use case.

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[9] Message format standards simplify message translation, a process that can lead to loss of data when moving from a richer to sparser format or to functional limitations because of the need to accommodate the "least-common denominator" among formats. Business process standards prescribe message flow and how transactions are processed, simplify coordination among parties, and help achieve predictable outcomes for end users.

BOX D: DIRECTORIES AND ROUTING MECHANISMS

Solution proposals, as well as existing payment services, use various types of directories, either together or separately, to perform a variety of functions. A **lookup directory** stores and supports retrieval of information to facilitate initiation of payments. The information held in the lookup directory may include such items as payment routing instructions, remittance data requirements, or payment options accepted. **Alias directories** are a type of lookup directory that facilitate the use of an easy to share designator (alias), such as an email address or telephone number, as a substitute for the underlying payment routing information (e.g., account number and routing number, public crypto key). The alias can either be the basis for routing a payment or a key to retrieve this information. Once the payer and payee information is known, a **routing directory** is essential for directing payments to the appropriate payee, payee's account and/or payee's financial services provider. The operation of a routing directory may be integrated directly into the mechanism for transmitting payments from payer to payee.

Some asset-based proposals use directories as a way to dictate ownership of the asset rather than to route payments. In certain account-based proposals, directories are used to look up payment routing information, but the actual routing of payments is done through a separate mechanism (e.g., ACH). Finally, many closed-loop proposals combine directories with a routing mechanism (i.e., payments cannot be sent without an end user registering and going through the closed-loop solution's directory).

Many solution proposals use alias directories to send payments without the payer having to know the payee's account number, and some solution proposals leverage digital identities and secure messaging in order to enhance both security and efficiency. However, in order to allow payments to cross solutions and facilitate ubiquity, routing mechanisms need to interact with multiple distinct alias directories. Failure to provide a mechanism like a federated directory design / model or a single national directory could lead to the use or development of multiple, non-interoperable routing mechanisms, which in turn could lead to fragmentation and slow the path to ubiquity.

Although a single national directory would reduce the need for interoperability between different directory models, it could also be a target for cyber theft and raise issues related to data privacy. In addition, because several alias-based payment services are already in the market or in development, creation of a single national directory may not be commercially feasible. Therefore, a federated directory might be preferred. A federated directory model would

reduce the time required to achieve ubiquity and might allow for a variety of solutions to coexist, promoting competition, while also providing the benefits of interoperability to end users. Still, a federated directory model would have to address several challenges including overcoming potential reluctance of various directories to share information, achieving a predictable end-user experience, and ensuring the integrity of directory entries in order to prevent fraud and erroneous payments.

Broad access to clearing and settlement mechanisms may also be an important part of enabling interoperability across faster payments solutions. If multiple solutions come to market, there may be cases where payer and payee service providers are not part of the same solution and their separate solutions do not have access to the same settlement mechanism. In these cases, additional settlement layers may be necessary to allow for settlement across solutions. For example, a payer's provider may need to rely on a third party to access the settlement mechanism of the payee's provider. These layers may increase the volume and

complexity of payment information being transmitted and processed, which in turn increases the time to settle and creates extra points of failure. A common direct settlement mechanism is not technically required for interoperability, but it could address these operational risks posed by additional settlement layers. Furthermore, these challenges are more complex when it comes to cross-border payments. As a result, ubiquity in cross-border payments may take longer to come to fruition compared with faster payments for domestic use cases.

In addition to addressing challenges related to operational risk, wider direct access to common settlement mechanisms could enable broader participation in the faster payments system, including for many smaller depository institutions.[10] Direct access to central bank settlement mechanisms for nonbanks, moreover, could enable them to gain efficiencies by acting as both faster payments solution operators and service providers without a need for intermediaries. However, entities must be eligible and approved for access to Federal Reserve settlement services.[11] Use of existing or enhanced central bank settlement mechanisms by faster payments solutions could enable broader participation by smaller depository institutions, versus solutions that require access to commercial bank settlement mechanisms.

Enabling wider direct access to central and commercial bank settlement mechanisms,

however, faces several challenges. For example, modifying the eligibility requirements for access to central bank settlement accounts may require statutory changes. Potential changes would have to consider the integrity of the payment system as a whole and prevent risk from being introduced into what is currently a highly trusted settlement mechanism. While nonbank providers are subject to both federal and state laws, regulations, and supervision, they typically offer a more limited set of financial products and services and may have a different risk profile than eligible depository institutions. In addition, broader depository institution access to commercial bank settlement arrangements could face challenges related to the willingness of the settlement arrangements to manage the participation of potentially thousands of organizations.

In summary, facilitating interoperability requires that several concerns be addressed, including: how the industry will implement message format and business process standards in a way that allows payments to cross faster payments solutions while meeting the needs of individual solutions and leaving the door open for differentiation and competition; how the industry will address the challenges associated with the existence of multiple proprietary directories that perform different functions; and how the industry will achieve fast inter-provider settlement in a way that is fair, safe, and efficient.

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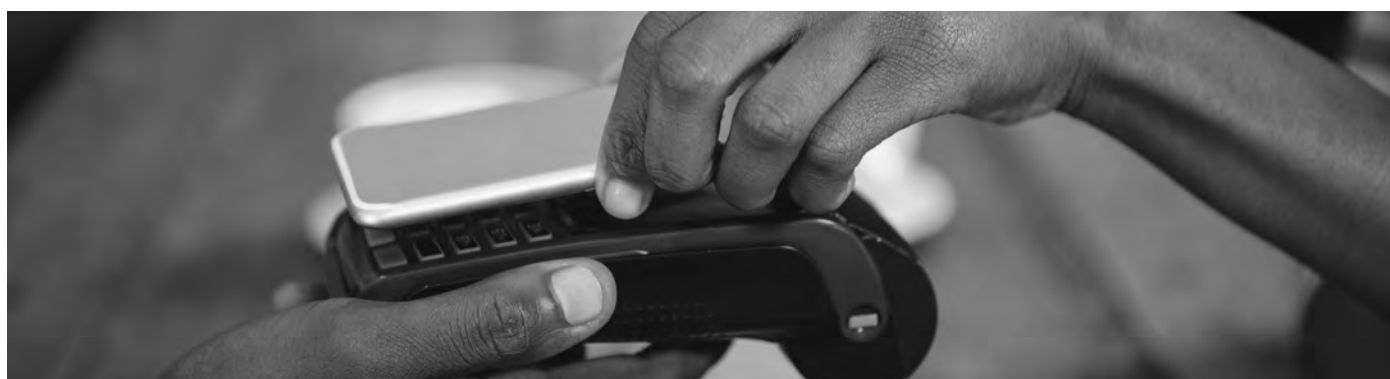
[10] For more on settlement mechanisms, see Box C: "Settlement Considerations for Faster Payments Solutions."

[11] Federal Reserve Bank accounts and services are available only to depository institutions and others that are specifically authorized by statute. In general, Federal Reserve Banks are not authorized to provide services directly to nonbanks.

THE ECOSYSTEM

As faster payments shift to the implementation stage in the United States, developing a faster payments ecosystem with an effective governance framework in a timely manner will help address the foundational issues pertaining to broad adoption; safety, integrity, and trust; and interoperability.[12] In an environment where there might be only a few faster payments solution operators, it is conceivable that coordination on these foundational issues might take place through bilateral contractual agreements. The task force believes, however, that multiple faster payments solutions coexisting is preferable as such competition encourages innovation, increases choice for financial institutions and other service providers, and enhances the value of faster payments for end users. Therefore, it is ideal from the task force perspective, to create an inclusive governance framework that supports competition and new entrants while enabling all faster payments stakeholders to have influence on the way the faster payments system evolves in order to ensure the task force vision is met.

It is possible that faster payments solutions could be consolidated to a few solution operators due to economies of scale and scope and network effects. However, this may have negative effects; with limited competition, solution operators may not have incentive to respond to the demands and interests of end users and other service providers, especially smaller ones. Specifically, smaller depository institutions, nonbank service providers and smaller solution operators are concerned that the major solution operators would set pricing, rules and other processes that are not transparent and could make it difficult for smaller service providers to compete with their larger counterparts on a level-playing field. In addition, business end users are concerned about having the ability to manage usage in a way that enables them to balance the expenses they incur with the benefits they receive from faster payments.

To avoid negative effects created by a lack of competition among solution operators, government mandates or regulations are often used in other countries. In contrast, the United States has historically taken a market-based approach, including by supporting competition between public and private solution operators to determine the evolution of ACH and checks. Creating a pro-competitive, inclusive and collaborative environment at the beginning stage of faster payments implementation likely will help ensure these concerns can be addressed.

A formal governance framework is essential for diverse participants of the ecosystem to effectively collaborate and make decisions. For example, to achieve interoperability or to address weak-link, security concerns, cross-solution rules and standards are needed. Similarly for broad adoption, cross-solution guidelines that define baseline features, such as timing in the steps of the payments process, legal rights, and risk management for cross-solution payments, may be helpful in providing transparency, predictability, and reliability to end users. At the same time, it is worth noting that these guidelines need not prevent solution operators and service providers from offering features superior to the baseline features. A governance framework determines how these cross-solution rules, standards, and guidelines will be set.

In addition to implementation and enforcement of cross-solution rules and standards, there is a need for a framework that helps the faster payments system thrive and evolve in ways that foster competition and ensure sustainability. This could include exploration of ways to: continuously improve the security of the faster payments system against evolving threats; identify and address potential gaps with respect to the Effectiveness Criteria, including around harder-to-address use cases; deepen collective understanding of the risks and potential of new technologies; and identify impediments to compliance with existing laws and regulations,

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[12] Governance is the process by which decisions are made when multiple parties need to agree on capabilities, rules, standards, policies, and processes that impact others.

including whether changes are needed to laws and regulations.[13] The framework could also play a role in establishing education and/or advocacy programs.

To create such a governance framework, active collaboration clearly is needed from faster payments solution operators as well as from all other participants in the ecosystem, including depository institutions and other service providers, payment processors, technology vendors, and end users. Inclusivity will contribute to a sustainable, evolving ecosystem.

A key concern in creating a governance framework, however, is whether participants in the ecosystem have incentive to collaborate. Their incentives may be influenced by a variety of factors including the purpose and expected outcomes of a given collaborative effort, the timing of the effort, or other business or legal considerations. For example, most solution operators may be willing to participate early on in a collaborative effort that defines the

baseline security all solutions should maintain to avoid creating weak links and ensure the integrity of the overall faster payments infrastructure. This is because strong security is more likely to be achieved via security features built in during the design stage of a solution. In contrast, some solution operators may not wish to participate in a collaborative effort that develops standards and rules for interoperability, choosing instead to focus solely on building the reach of their own solution until the market demand for interoperability is strong. In that event, an established faster payments solution operator may tend toward bilateral agreements with a small number of other established solutions.

To facilitate participation in collaborative efforts and/or the governance framework, articulating the focus may help, for example, by limiting the scope to issues that are commonly shared across faster payments solutions. In addition, starting with a flexible

[13.] For example, how to ensure that consumers have an option of avoiding overdraft or non-sufficient funds fees in making faster payments may not be clear under the current regulatory framework. Other potential laws and regulations that may be reviewed include BSA / anti-money laundering (AML) compliance programs, OFAC, Uniform Commercial Code Article 4, and Dodd Frank 1073.

governance framework and allowing it to evolve could help overcome reluctance to participate early on. Similarly, framing rules, standards, and guidelines to provide some degree of flexibility can help. For example, to facilitate interoperability, cross-solution rules and standards could enable the mechanics of interoperability through high-level "rules of the road" that bridge differences across solutions and only address areas that are essential for interoperability. Nevertheless, defining and implementing cross-solution rules and standards will be a challenge given that all solutions, including those already in the market, will have their own rule sets and standards, delivery mechanisms, and technologies. It is also a challenge to find the right balance; cross-solution rules and standards should be flexible enough to encourage participation in the coordination effort, as well as competition and innovation, but prescriptive enough to achieve the desired goals.[14]

A related challenge is enforcement of the cross-solution rules and standards. In some areas, such as end-user protections, regulatory enforcement may exist, but in other areas industry self-enforcement may be needed. Again, a balanced approach to enforcement is critical. If it is too strict, incentives of stakeholders to participate in a collaborative effort or the overall governance framework may be diminished; but if it is too loose, the desired outcomes may not be achieved.

In the final analysis, inducing diverse stakeholders to participate in and accept the authority of a voluntary and broadly inclusive governance framework will be challenging. The structure and scope of the framework will be key. Issues pertaining to membership, decision making, and funding must be collaboratively defined and evolve as needed with development of the faster payments ecosystem. This includes processes for ensuring equitable segment-level representation and the ability to influence decisions that may affect different groups to varying degrees (e.g., voice vs. vote). Moreover, how the framework is funded and how that influences these processes must be considered in the design of the framework, especially given concerns about a "pay-to-play" approach for the allocation of votes and/or membership.

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[14] The detailed processes and procedures that sit underneath the cross-solution rules and standards should be defined in each individual solution's rules and standards, and thus could vary by solution operator. The check-imaging system has taken this approach: cross-solution rules (the Electronic Check Clearing House Organization rules) are supplemented by a business practices agreement between an exchange provider and a financial institution, and a financial institution-customer agreement.

GOALS AND RECOMMENDATIONS

The foundational issues discussed above suggest a number of key challenges that must be addressed in a systemic way. In particular, developing an ecosystem that supports competition, while facilitating the collaboration necessary to resolve issues pertaining to broad adoption; safety, integrity, and trust; and interoperability, is required. These include:

- Potential inconsistencies and lack of transparency in the end-user experience that could diminish the value proposition for adopting faster payments, particularly those pertaining to certain baseline features that affect the timing in the steps of the payments process, error resolution, legal rights, fees, risks, and liability;

- A potential lack of trust in the integrity and security of faster payments due to concerns about potential "weak links" in the individual solutions and/or the entire faster payments system;

- A potential lack of confidence in the financial soundness of the network due to weak links in the ability of individual solution operators and/or service providers to meet their financial and legal obligations; and

- A potential lack of effective and seamless functional interoperability.

The task force has a strong preference for addressing these issues through broad stakeholder collaboration that allows market competition to determine the ultimate direction for faster payments. While broad collaboration can be difficult to achieve in the U.S. context, given the competing interests of major payment system operators, service providers, and end users, the task force believes its own efforts demonstrate that such collaboration is possible and can serve as the foundation for the work that lies ahead.

The task force calls upon all stakeholders to seize this historic opportunity to realize the vision for a payment system in the United States that is faster, ubiquitous, broadly inclusive, highly secure, and efficient, with all service providers enabling ubiquitous receipt for end-user customers by 2020. Achieving this goal means a system that demonstrates significant and continuous progress in fully meeting the Effectiveness Criteria. It also means all stakeholders collaborating to resolve the issues that will otherwise stand in the way of broad adoption; safety, integrity, and trust; and interoperability, as well as taking steps to make their internal systems "faster payments ready."

While it will be challenging, the task force believes that it is possible to meet this goal by implementing the recommendations in this report. Specifically, the task force recommends that work begin collaboratively in three key areas: **Governance and Regulation, Infrastructure,** and **Sustainability and Evolution**.

GOVERNANCE AND REGULATION RECOMMENDATIONS

First, the task force recommends a framework for collaboration, decision-making, and rule setting, as well as regulations that support the faster payments ecosystem:

- *Recommendation 1: Establish a faster payments governance framework*
  A voluntary, industry-led framework for collaboration and decision making is needed to execute on many of the task force recommendations and to achieve ubiquitous receipt – where all payment service providers are capable of receiving faster payments and of making those funds available to their end-user customers in real time – by 2020.

- *Recommendation 2: Recommend and establish faster payments rules, standards, and baseline requirements that support broad adoption; safety, integrity, and trust; and interoperability*
  Establishment and enforcement of cross-solution rules and standards will aid in achieving the core ecosystem goals of broad adoption; safety, integrity, and trust; and interoperability. These cross-solution rules and standards would encompass a baseline set of requirements that enable payments to move securely and reliably between solutions, and ensure end users have predictability and transparency in certain key features pertaining to timing, fees, error resolution, and liability.

- *Recommendation 3: Assess the payments regulatory landscape and recommend changes to the regulatory framework*
  The task force asks the Federal Reserve to initiate an effort with relevant regulators to evaluate current laws and regulations to ensure that they are suited to the unique characteristics of faster payments. The task force also recommends that a stakeholder group within the governance framework be formed to prioritize regulatory concerns and engage with relevant regulators on these issues.

INFRASTRUCTURE RECOMMENDATIONS

Second, the task force recommends enabling needed infrastructure to support faster payments. This includes:

- *Recommendation 4: Establish an inclusive directory work group to identify and recommend a directory design for solutions to interoperate in the faster payments system*
Developing a design for directory services is important for achieving the core ecosystem goal of interoperability. Recognizing there are a number of directory services currently in existence or under development, the task force believes that work on this effort should begin as soon as possible upon publication of this Final Report to progress toward a recommendation for a commercially viable model of directory services.

- *Recommendation 5: Enhance Federal Reserve settlement mechanisms to support the faster payments system*
The task force asks the Federal Reserve to determine the optimal design of and implement a 24x7x365 settlement service to support the needs of the faster payments system. The task force believes that broader access to Federal Reserve settlement services will level the playing field and enhance competition among providers of faster payment services.

- *Recommendation 6: Explore and assess the need for Federal Reserve operational role(s) in faster payments*
As faster payments are implemented in the market, the task force asks the Federal Reserve to explore and assess the need for an operational role(s) in the faster payments system to support ubiquity, competition, and equitable access to faster payments in the United States. In addition to providing for a settlement capability, such roles might include provision of directory services, transaction processing, network access, security, and/or cross-border payments.

SUSTAINABILITY AND EVOLUTION RECOMMENDATIONS

Third, the task force recommends that the faster payments system in the United States be future-focused and able to address evolving security threats, meet changing end-user needs efficiently and effectively, and enable continuous innovation through new technologies. An effective system also requires an ability to monitor progress toward achievement of the task force vision, while taking action to address identified gaps and broaden end-user participation. This encompasses a variety of activities, including:

- *Recommendation 7: Recommend, develop, and implement methods for fraud detection, reporting, and information sharing in faster payments*
  Timely detection of fraud is important to building integrity and trust among end users in faster payments. As such, there are benefits that can be gained from timely fraud reporting and information sharing across solutions because it can highlight patterns in fraud and/or breaches that may not be visible to individual solutions alone.

- *Recommendation 8: Develop cross-solution education and advocacy programs aimed at awareness and adoption*
  Education and advocacy programs for both end users and service providers are an important part of achieving the core ecosystem goal of broad adoption. For end users, awareness and understanding of faster payments in general should be the focus. For service providers, programs should focus on awareness of the Effectiveness Criteria, particularly "Usability" (U.2) and "Accessibility" (U.1), as well as the baseline requirements for faster payments established under the governance framework.

- *Recommendation 9: Conduct research and analysis to address gaps in cross-border functionality and interoperability*
  Research and analysis should be undertaken to advance understanding of the requirements for cross-border interoperability with various jurisdictions, and develop recommendations to enable interoperability between faster payments solutions in the United States and faster payments solutions in other country jurisdictions.

- *Recommendation 10: Continue research and analysis on emerging technologies*
  New technologies have the potential to change the payment landscape. As such, it is important to deepen understanding of the risks they may pose, as well as the potential they might offer, particularly with regard to enhancing security and/or meeting largely unmet needs in cross-border transactions and among underserved end users.

THE PATH FORWARD AND NEXT STEPS

The task force believes that implementing these recommendations will lead to a payment system in the United States that is fast, ubiquitous, broadly inclusive, safe, highly secure, and efficient by 2020. To meet this aggressive timeframe, executing on these recommendations must commence this year and be sequenced to ensure appropriate resources are deployed in a timely manner and used effectively. As such, the task force recommends that work on critical path activities begin immediately and proceed as follows:

NEXT STEPS FOR 2017

To provide early direction for the development and evolution of faster payments solutions already in and entering the market, the task force recommends the following activities start as soon as possible following publication of this Final Report:

- *Develop a governance framework proposal*
  A critical first step is establishing a governance framework (Recommendation 1) that will ultimately have responsibility for implementing many of the remaining recommendations. In fact, this work has already begun with the formation of an Interim Collaboration Work Group (ICWG), which will develop, publish, and solicit public comment on its proposal for a governance framework.

- *Stand up informal work groups*
  The task force expects groundwork to begin as soon as feasible on rules, standards, and baseline requirements (Recommendation 2); applicable regulatory requirements (Recommendation 3); and directory design to facilitate interoperability (Recommendation 4).

- *Begin work on a 24x7x365 settlement system*
  Because broad access to settlement services will help level the playing field and enhance competition among providers of faster payments services, the task force calls on the Federal Reserve to begin efforts immediately on a 24x7x365 settlement service (Recommendation 5).

- *Begin to assess the need for Federal Reserve operational role(s)*
  To ensure ubiquity, competition and equal access to the faster payments system, the task force calls upon the Federal Reserve to initiate an exploration and assessment of the need for Federal Reserve operational role(s) by year end (Recommendation 6).

2018 (AND BEYOND)

Completion of the work of the ICWG will lay the foundation for a substantial amount of critical work to take place as soon as possible in 2018. This will include:

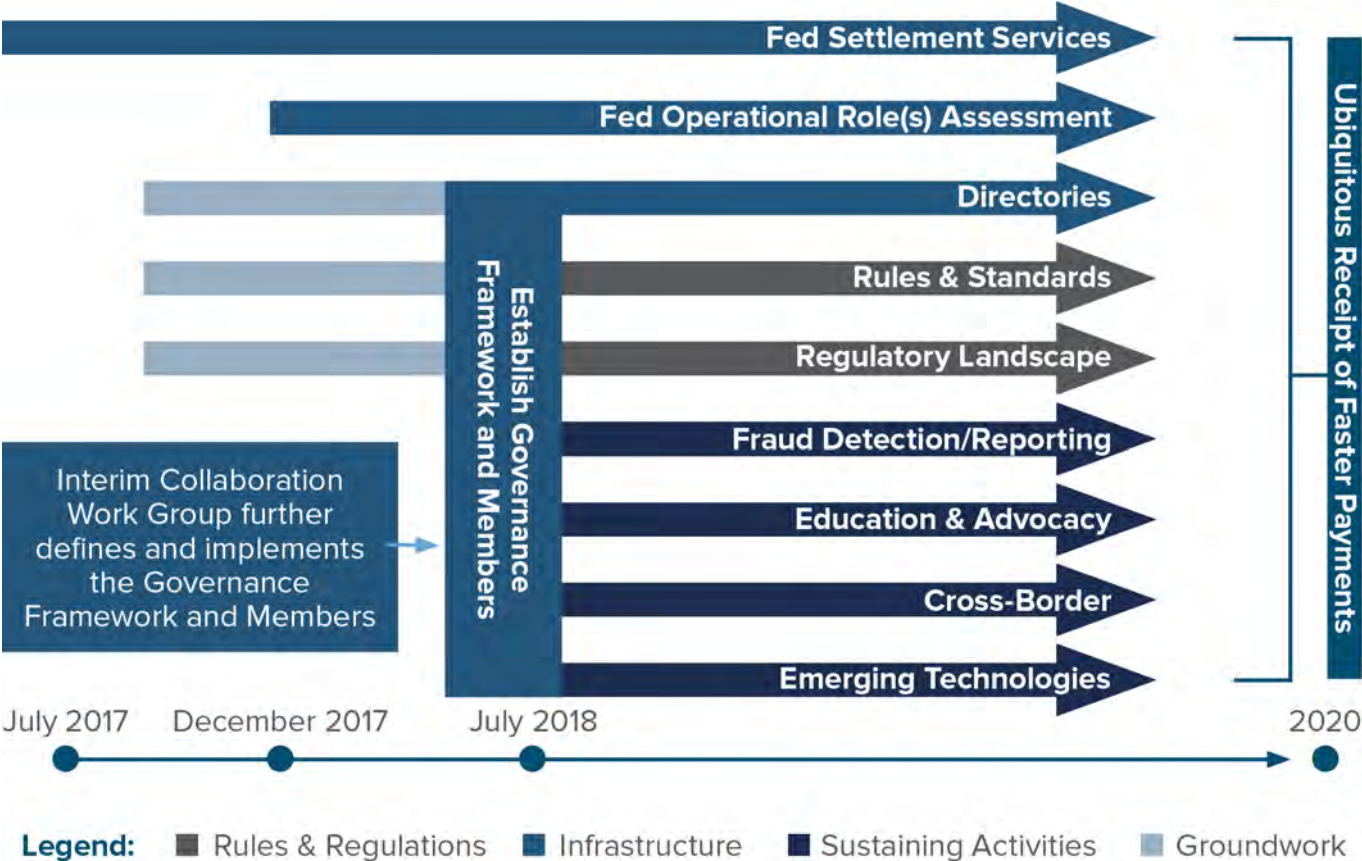- *Establish the governance framework and its members*
  The governance framework will enable collaboration and decision making on cross-solution issues that are vital to the development of the faster payments system. This will include taking the groundwork provided by the informal work groups and using it to facilitate establishment of cross-solution rules, standards and baseline requirements (Recommendation 2) and a commercially viable directory design for solutions to interoperate (Recommendation 4). In addition, the groundwork provided by the informal work group on regulatory requirements will support ongoing engagement with relevant regulators under the governance framework (Recommendation 3).

- *Carry out the work envisioned in Recommendations 7-10*
  The task force expects the members of the governance framework to convene and provide resources for groups to execute on the desired deliverables for key activities as quickly as possible, including fraud detection and information sharing (Recommendation 7); cross-solution education and advocacy (Recommendation 8); research and analysis to address gaps in cross-border functionality and interoperability (Recommendation 9); and research and analysis on risks and potential benefits of emerging technologies in the faster payments context (Recommendation 10).

- Diagram 1 provides a depiction of the task force's suggested sequencing and timing for initiating work on each recommendation to facilitate achievement of ubiquitous receipt of faster payments by 2020.

DIAGRAM 1: SEQUENCE OF NEXT STEPS FOR IMPLEMENTING THE TASK FORCE RECOMMENDATIONS

In the table that follows, the task force provides greater detail about each recommendation.

GOVERNANCE FRAMEWORK AND REGULATORY RECOMMENDATIONS

RECOMMENDATION 1: ESTABLISH A FASTER PAYMENTS GOVERNANCE FRAMEWORK.

The Faster Payments Task Force calls for the development of a faster payments governance framework, inclusive of all stakeholders, to make decisions to facilitate cross-solution payments and to achieve broad adoption; safety, integrity, and trust; and interoperability by 2020.

DETAIL:

The task force believes that an industry-led framework for cross-solution collaboration and decision making is needed to support achievement of the faster payments system goals by 2020. The task force recommends that this governance framework enable: establishment of goals and milestones, progress assessments, and identification of gaps and recommendations for appropriate action. Specifically, a body within the governance framework should facilitate successful pursuit of the task force goal of ubiquitous receipt – where all payment service providers are capable of receiving faster payments and of making those funds available to their end-user customers in real time – by 2020. For example, a body might recommend processing elements or development of infrastructure that would support ubiquitous receipt if it determines that carrying out the other recommendations alone is not sufficient for the industry to reach the ubiquitous receipt goal by 2020.

The recommendations that come under the umbrella of this governance framework include:
• Recommending and establishing cross-solution rules and standards and prioritizing changes in the regulatory framework;
• Supporting the development of infrastructure needed to achieve interoperability across solutions, such as directories; and/or
• Ensuring the sustainability and evolution of faster payments through advocacy and education on the faster payments system, research on cross-border payments and emerging technologies, and recommending and developing methods for fraud detection, reporting, and information sharing.

The task force believes the authority and legitimacy of a voluntary, industry-led governance framework rests on broad participation and input from diverse stakeholders in the faster payments ecosystem, and inclusive and transparent decision making that supports the goals of broad adoption; security, integrity, and trust; and interoperability. To this end, it recommends that the governance framework be established and carry out its responsibilities in a way that embodies the attributes outlined in the task force's Effectiveness Criteria for "Effective governance" (G.1) and "Inclusive governance" (G.2).[15] For example, the governance framework should include consideration of the public interest, provide for input and influence by all stakeholders, and have fair representation of stakeholders' interests and risks.

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[15] The task force's Faster Payments Effectiveness Criteria outlines desirable attributes for individual faster payments solutions, but many of the principles and considerations are similarly applicable for the faster payments system as a whole. See Faster Payments Task Force, Faster Payments Effectiveness Criteria, (January 2016), FasterPaymentsTaskForce.org.

TRANSPARENCY AND INCLUSIVENESS

To be transparent and inclusive, the task force recommends a body within this framework that represents the interests of all segments of the faster payments ecosystem and the broader public. Any decisions made by this body should be publicly available, including initial deliverables of a charter, constitution and membership requirements, and regular assessments of industry progress toward fulfilling the task force vision.

STEPS TO ADVANCE THIS RECOMMENDATION

To advance this recommendation, the task force has stood up a short-term Interim Collaboration Work Group (ICWG) that has two broad objectives: 1) develop an initial faster payments governance framework that incorporates public commentary; and 2) establish the framework and membership. In developing the framework, the ICWG will define and implement: the initial charter of the governance framework; a representative and inclusive structure for membership, leadership, and voting rights; and initial funding and administrative support. The responsibilities and structures of any initial body(ies) and/or working committees within the governance framework will also be defined.

The membership of the ICWG was determined by election within the task force and includes qualified representatives from each of the defined task force segments. The composition of the ICWG is outlined below:

- Large Financial Institutions [2 members]
- Medium Financial Institutions [2 members]
- Small Financial Institutions [2 members]
- Nonbank Providers [6 members]
- Business End Users [2 members]
- Consumer Interest Organizations [2 members]
- Government End Users [up to 2 members]
- Other (includes representatives from industry organizations, regulators, rules and standards organizations, consultants, and academic institutions) [6 members]
- Federal Reserve, ICWG chair [1 member, non-voting]

In addition, under its charter, the ICWG may appoint additional members, including from outside the task force, as necessary to ensure needed expertise.

When this work is completed, and the governance framework and membership are established, the ICWG will stand down and cease operation.

BUILDING INDUSTRY SUPPORT

The faster payments ecosystem will be successful only if the industry participates, and momentum and engagement continues into the future. The task force invites **all** payments stakeholders to participate in and support the governance framework. The benefits of doing so include being part of a faster payments network that ensures: a) expanded reach of any given solution through interoperability with other faster payments solutions, and b) baseline requirements (which helps encourage trust in and adoption of faster payments).

An ICWG will drive the development of a governance framework that is representative and inclusive of all payment stakeholders. The recommendations from the ICWG will be published for payment stakeholder comment upon completion of its work.

TIMING

The task force recommends the ICWG develop its initial recommendations by year-end 2017. The ICWG will disband upon establishment of the governance framework and its membership.

RECOMMENDATION 2: RECOMMEND AND ESTABLISH FASTER PAYMENTS RULES, STANDARDS, AND BASELINE REQUIREMENTS THAT SUPPORT BROAD ADOPTION; SAFETY, INTEGRITY, AND TRUST; AND INTEROPERABILITY.

The Faster Payments Task Force calls upon a body(ies) within the governance framework to recommend, establish, and enforce cross-solution rules and standards that aid in achieving the core faster payments ecosystem goals of broad adoption; safety, integrity, and trust; and interoperability. These cross-solution rules and standards would encompass a set of baseline requirements that enable payments to move securely and reliably between solutions, and to ensure end users have predictability and transparency in certain key features pertaining to timing, fees, error resolution, and liability.

DETAIL:

RULES: To enable interoperability for payments that cross faster payments solutions, the task force calls upon a body(ies) within the governance framework to recommend, establish, and enforce cross-solution rules to address issues such as timing for the steps in the payments process (e.g., clearing, availability of good funds to the payee and settlement), and transparency of end-user fees. Cross-solution rules for fraud and error detection, reporting, resolution, and assignment of liability will also be important, given faster payments are irrevocable by the time funds are made available to the payee. In setting these rules, the task force also recommends that the attributes described by the task force's Effectiveness Criteria related to "Safety and Security" (S.1-S.11), "Speed (Fast)" (F.1-F.5), and "Predictability" (U.3) are adopted. For example, the Effectiveness Criteria "Handling disputed payments" (S.5) refers to requirements, processes, and timeframes for addressing unauthorized, fraudulent, erroneous, or otherwise disputed payments, as well as allocation of liability, which are fundamental to building end-user trust in the faster payments system. The Effectiveness Criteria "Predictability" (U.3) refers to aspects of the payment experience that should be communicated to the end user in advance and at the time of each payment.

STANDARDS: To enable interoperability for payments that cross faster payments solutions, the task force calls upon a body(ies) within the governance framework to recommend, establish, and enforce cross-solution standards to address issues such as technical data and message format standards. In setting these standards, the task force recommends that the attributes described by the task force's Effectiveness Criteria related to "Safety and Security" (S.1-S.11), particularly "End-User Data protection" (S.9); "Contextual Data capability" (U.4); and "Payment format standards" (E.4) are adopted.

BASELINE REQUIREMENTS: To ensure that payments that cross faster payments solutions do so safely and securely, and to build trust and confidence of end users, the task force calls upon a body(ies) within the governance framework to recommend and establish a core set of baseline principles and/or requirements for faster payments solutions, which could include:

- Requirements for strong security, including those for identity management, end-user and payment authentication, payer authorization, data protection, and fraud prevention and mitigation. The task force recommends that the attributes described by the task force's Effectiveness Criteria "End-User/Provider Authentication" (S.10), "Payer Authorization" (S.2) "End-User Data protection" (S.9), and "Risk management" (S.1) form the foundation for these baseline requirements.

- Requirements that demonstrate participants in faster payments solutions can fulfill their financial and legal compliance obligations pertaining to cross-solution payments. The task force recommends that the attributes described by the task force's Effectiveness Criteria "Participation requirements" (S.11) form the foundation for these baseline requirements.

- Minimal acceptable standards for the end-user experience, such as uniform disclosure requirements and standard terms. The task force recommends that the attributes described by the task force's Effectiveness Criteria "Usability" (U.2) be incorporated into these baseline requirements.

STEPS TO ADVANCE THIS RECOMMENDATION

The task force recognizes that work needs to commence on this recommendation as soon as possible upon publication of this Final Report. Accordingly, the task force asks the Federal Reserve to facilitate the formation of an informal rules and standards work group that would identify and complete necessary groundwork on benchmarking existing rules sets, which could be passed on to a body(ies) within the governance framework once it is established. It is important to note that this work group will not bring forward any recommendations or decisions pertaining to rules and standards.

WHO:

The informal rules and standards work group will identify and complete necessary groundwork for this recommendation. The work group will comprise payment stakeholders with rules- and standards-making experience, and the task force asks the Federal Reserve to facilitate its establishment. Once a governance framework is developed, this recommendation would become a formal responsibility of a body(ies) under that framework (see Recommendation 1).

TIMING:

The task force recommends the informal rules and standards work group be formed as soon as possible upon publication of this Final Report.

RECOMMENDATION 3: ASSESS THE PAYMENTS REGULATORY LANDSCAPE AND RECOMMEND CHANGES TO THE REGULATORY FRAMEWORK.

The Faster Payments Task Force asks the Federal Reserve to initiate an effort with relevant regulators to evaluate current laws with respect to faster payments, clarify the applicability of and make appropriate changes to regulations, and promulgate new regulations as needed.

DETAIL:

The scope of this evaluation should extend to whether existing regulations (in their current form) for other payment systems would cover faster payments solutions as they come to market. As discussed in the task force's Effectiveness Criteria "Legal Framework" (L.1), relevant regulations include Office of Foreign Assets Control (OFAC), Anti Money Laundering (AML), Bank Secrecy Act (BSA), the Unlawful Internet Gambling Enforcement Act (UIGEA; Regulation GG), Federal consumer protection regulations (such as Regulation E and Regulation Z), Regulation II, Regulation CC, and Federal and State Money Service Businesses (MSB) laws.

This effort should also be ongoing so as to ensure that regulations are flexible to the evolving design of faster payments and the evolving security technologies and threats. Therefore, the scope of this recommendation also extends to research and analysis of a range of potential emerging technologies that may be used for faster payments solutions.

STEPS TO ADVANCE THIS RECOMMENDATION

The task force recognizes that work needs to commence on this recommendation as soon as possible upon publication of this Final Report and this effort needs to be driven by payment stakeholders providing insight on where there is most need for change. Accordingly, the task force asks the Federal Reserve to facilitate the formation of an informal regulatory priorities work group that would commence work on identifying and prioritizing areas of laws and regulations where there is most need for change. Once the governance framework is established, this work could be passed on to a group within that framework to take over formal responsibility for this recommendation and to engage with relevant regulators to drive this recommendation forward.

WHO:

The informal regulatory priorities work group will commence work on identifying and prioritizing the areas where there is the most need for change. The task force asks the Federal Reserve to facilitate the formation of this informal work group. Once a governance framework is established, this recommendation would become a formal responsibility of a group under that framework and that group will have responsibility to engage with relevant regulators (see Recommendation 1).

TIMING:

The task force recommends the informal regulatory priorities work group be formed as soon as possible upon publication of this Final Report. Once the governance framework is established, the task force recommends that a group under that framework will engage with relevant regulators on priority regulatory concerns from the perspective of payment stakeholders. The task force intends that the evaluation be ongoing through collaborative engagement between the group within the governance framework and the regulators.

INFRASTRUCTURE RECOMMENDATIONS

RECOMMENDATION 4: ESTABLISH AN INCLUSIVE DIRECTORY WORK GROUP TO IDENTIFY AND RECOMMEND A DIRECTORY DESIGN FOR SOLUTIONS TO INTEROPERATE IN THE FASTER PAYMENTS SYSTEM.

The Faster Payments Task Force calls for identification and development of an appropriate design for directory services that allows payers to send payments across faster payments solutions by using a non-Personally Identifiable Information (PII) identifier (alias).

DETAIL:

The task force believes that the development of a model design for directory services is important to achieving the core ecosystem goal of interoperability. Recognizing there are a number of directory services currently in existence or being developed, the task force believes that a federated directory model (where a set of directories are connected such that a search of multiple directories can be undertaken to retrieve the information necessary to route the payment) may be an effective way to achieve interoperability between faster payments solutions in a timely manner. The outcomes to be achieved by this recommendation are:

- To enable a payer to send a payment without being required to provide the payee's account information;
- To enable a payee, or the payee's service provider, to register a single alias with a single directory to receive payments originated through any participating alias-based payment service; and
- To stand up a commercially viable model of directory services that can be used for both business and consumer payments.

The task force recommends that the directory services model incorporate attributes of the task force's Effectiveness Criteria for "Safety and Security" (S.1-S.11), including "End-User Data protection" (S.9) to prevent the unintended exposure of end-user data; "Security controls" (S.7) requiring controls to foster security of confidential, private, and sensitive data; and "End-User/Provider Authentication" (S.10) requiring robust identification and verification for enrolling and transacting with end users and service providers to help mitigate fraudulent and erroneous payments.

STEPS TO ADVANCE THIS RECOMMENDATION

The task force recognizes that work needs to commence on this recommendation as soon as possible upon publication of this Final Report. Accordingly, the task force asks the Federal Reserve to call for volunteers from the payments community and facilitate formation of an inclusive informal directory work group to identify and complete necessary groundwork, including to:

- Undertake gap analysis and a benchmark on directories that currently exist;
- Review alternative directory designs for facilitating interoperability, taking into account security risks; and
- Determine the best approach for standing up a body to oversee the implementation and ongoing function of the directories model.

This groundwork could be passed on to a group within the governance framework once it is established. It is important to note that the informal directory work group will not be bringing forward any recommendations or decisions.

The informal directory work group will identify and complete necessary groundwork for this recommendation, and the task force asks the Federal Reserve to facilitate the formation of this inclusive informal directory work group. Once a governance framework is developed, this recommendation would become a formal responsibility of a group under that framework (see Recommendation 1).

TIMING:

The task force recommends the informal directory work group identify and complete necessary groundwork as soon as possible upon publication of this Final Report. Once a governance framework is established, this recommendation would become a formal responsibility of a group under that framework and that group would have responsibility to recommend a commercially viable model of directory services.

RECOMMENDATION 5: ENHANCE FEDERAL RESERVE SETTLEMENT MECHANISMS TO SUPPORT THE FASTER PAYMENTS SYSTEM.

The Faster Payments Task Force asks the Federal Reserve to develop a 24x7x365 settlement service that supports the needs of faster payments solutions and considers ways to broaden access to its settlement services within the bounds of its mandate.

DETAIL:

The task force asks the Federal Reserve to determine the optimal design of, and implement, a settlement service to support the needs of faster payments solutions. The task force believes that broader access to its settlement services will level the playing field and enhance competition among providers of faster payments services.

The task force recognizes that the Federal Reserve will need to assess policy implications and abide by policy criteria when considering any operational role, including implementation of both the settlement and access elements of this recommendation.

WHO:

Federal Reserve

TIMING:

The task force recommends that the Federal Reserve commence work on developing a 24x7x365 settlement service immediately following the publication of the Final Report.

RECOMMENDATION 6: EXPLORE AND ASSESS THE NEED FOR FEDERAL RESERVE OPERATIONAL ROLE(S) IN FASTER PAYMENTS.

As faster payments are implemented in the market, the Faster Payments Task Force asks the Federal Reserve to explore and assess the need for operational role(s) in the faster payments system to support ubiquity, competition, and equitable access to faster payments in the United States.

DETAIL:

The task force supports a market-driven approach for faster payments. Based on historical experience, there is some concern that the payment industry may face challenges in enabling ubiquity, competition, and equitable access to faster payments in the United States. Should these challenges arise and persist, the task force asks the Federal Reserve to explore and assess the need for it to play an operational role(s). In addition to providing for a settlement capability, as noted in Recommendation 5, such roles might include provision of: directory services, transaction processing, network access, security, and/or cross-border payments.

WHO:

Federal Reserve

TIMING:

The task force recommends that the Federal Reserve initiate the first such assessment by year-end 2017 and conduct subsequent assessments on a periodic basis as faster payments are implemented in the market.

SUSTAINABILITY AND EVOLUTION RECOMMENDATIONS

RECOMMENDATION 7: RECOMMEND, DEVELOP, AND IMPLEMENT METHODS FOR FRAUD DETECTION, REPORTING, AND INFORMATION SHARING IN FASTER PAYMENTS.

The Faster Payments Task Force calls for a group within the governance framework to recommend and develop methods for fraud detection and reporting, and to implement methods for information sharing for faster payments to achieve the core ecosystem goal of safety, integrity, and trust.

DETAIL:

The task force seeks to make faster payments secure and protected by establishing rules and baseline requirements for identity management; payer authorization; end-user and payment authentication; fraud and error prevention, mitigation, detection and resolution; and data protection (Recommendation 2). In addition, through the proposal process, the task force encourages the application of new security technologies to make faster payments ever more secure. In addition to these strong requirements and in recognition that fraud cannot be eliminated, the task force also believes that timely detection of fraud is important to building integrity and trust among end users in faster payments. As such, there are benefits that can be gained from timely fraud reporting and information sharing across solutions, because it can highlight patterns in fraud and/or breaches that may not be visible to individual solutions alone. For example, sharing information such as patterns suggestive of risk, known instances of fraud, known vulnerabilities, and effective risk mitigation strategies may assist fraud management of the faster payment system.

STEPS TO ADVANCE THIS RECOMMENDATION

To carry out this recommendation, the task force calls for a group under the governance framework to recommend and develop methods for fraud detection that would be implemented by faster payments solution operators and/or service providers. It also asks this group to recommend and develop reporting needs for service providers and implement a method to enable fraud information sharing. The task force requests that the group take into account the attributes described in the task force's Effectiveness Criteria for "Safety and Security" (S.1-S.11), including "Fraud information sharing" (S.6) in facilitating a fraud information sharing method and developing an approach consistent with laws that are applicable to securing information that should not be disclosed.

WHO:

A group under the auspices of the governance framework should work with the relevant work group(s) under the Secure Payments Task Force (SPTF) to recommend and develop methods for fraud detection and fraud reporting (see Recommendation 1). Implementation would be by faster payments solution operators and/or service providers.

The group within the governance framework should further coordinate with the SPTF to develop and implement a method to enable fraud information sharing consistent with applicable laws.

TIMING:

The task force recommends the work commence as soon as possible following the establishment of the governance framework and be ongoing to evolve with potential threats in the faster payments landscape.

RECOMMENDATION 8: DEVELOP CROSS-SOLUTION EDUCATION AND ADVOCACY PROGRAMS AIMED AT AWARENESS AND ADOPTION.

The Faster Payments Task Force calls for development of cross-solution education and advocacy programs. Programs targeted at potential end users would focus on building awareness of faster payments in general to assist in achieving the core ecosystem goal of broad adoption. Programs targeted at potential solution operators and service providers would focus on awareness of the task force's Effectiveness Criteria related to the provision of faster payments services and baseline requirements established for faster payments solutions under the governance framework.

DETAIL:

The task force believes that education and advocacy programs for end users, solution operators, and service providers are an important part of achieving the core ecosystem goal of broad adoption.

For end users, the task force recommends that the goal of awareness and understanding of faster payments in general should be the focus, and programs should be appropriately targeted to achieve broad adoption of faster payments, including for underserved end users. The task force acknowledges and emphasizes that these education programs are not a substitute for strong rules on end-user protections.

For solution operators and service providers, the task force recommends targeting programs to ensure awareness of the Effectiveness Criteria, particularly "Usability" (U.2) and "Accessibility" (U.1), as well as the baseline requirements for faster payments established under the governance framework (see Recommendation 2). The education and advocacy programs for service providers described in this recommendation are separate from marketing campaigns that faster payments solutions may undertake to promote their individual solutions.

WHO:

A group(s) under the governance framework will design and fund these programs (see Recommendation 1).

TIMING:

The task force recommends education and advocacy programs commence as soon as possible following the establishment of the governance framework.

RECOMMENDATION 9: CONDUCT RESEARCH AND ANALYSIS TO ADDRESS GAPS IN CROSS-BORDER FUNCTIONALITY AND INTEROPERABILITY.

The Faster Payments Task Force calls for research, analysis, and recommendations on baseline requirements that should be implemented to enable interoperability between faster payments solutions in the United States and faster payments solutions in other country jurisdictions.

DETAIL:

The task force believes that research and analysis should be undertaken to advance understanding of the requirements for cross-border interoperability with various country jurisdictions. The areas of research and analysis could include differences in messaging standards, languages, character sets, mandatory data elements, party/account identifiers, regulatory and legal considerations, safety and security mechanisms, timing of settlement and funds availability, and uptake of underserved end users. The task force also encourages this research to consider the attributes described in the task force's Effectiveness Criteria "Cross-border functionality" (U.5), which outline the expectations for faster payments solutions to enable convenient, cost-effective, timely, secure, and legal payments to and from other countries.

WHO:

A research group within the governance framework (see Recommendation 1).

TIMING:

The task force recommends the research commence after the governance framework is established with timelines to be set by a body within the governance framework.

RECOMMENDATION 10: CONTINUE RESEARCH AND ANALYSIS ON EMERGING TECHNOLOGIES.

The Faster Payments Task Force calls for continued research and analysis of a range of applicable emerging technologies used for faster payments, including digital currencies and distributed ledger technologies.

DETAIL:

The task force believes that new technologies have the potential to change the payments landscape. As such, it is important to deepen understanding of the risks they may pose, as well as the potential they may offer, particularly with regard to enhancing security and/or meeting largely unmet needs in cross-border transactions and among underserved end users. The task force calls for continued research and analysis of emerging technologies and their impact on the faster payments system and the marketplace.

WHO:

A research group within the governance framework (see Recommendation 1).

TIMING:

The task force recommends the research commence after the governance framework is established, with timelines to be set by a body within the governance framework.

APPENDICES

APPENDIX 1: QIAT ASSESSMENT RESULTS

Prepared by McKinsey & Company; February 10, 2017

This material was prepared by McKinsey & Company as an output of the qualified independent assessment and is a companion to the solution proposals and assessments found on FasterPaymentsTaskForce.org. Language, narrative and terminology within this document are the product of McKinsey's work and this material has not been amended. Certain references, word choices or terms may differ from how they are used in the Final Report. For example, the term "ubiquity" in this document refers to general accessibility, whereas the task force's Glossary of Terms defines ubiquity as "a payment system that can reach all accounts to ensure that a payer has the ability to pay any entity."

DELIVERABLE 4: QIAT FINAL REPORT

It has been a privilege and honor for the Qualified Independent Assessment Team (QIAT) to partner with the Faster Payments Task Force (FPTF) in support of Strategy 2 of the Federal Reserve's *Strategies for Improving the United States Payment System* paper to "identify effective approach(es) for implementing a safe, ubiquitous, faster payments capability in the United States."

The Federal Reserve engaged the QIAT on behalf of the FPTF from March 2016 – February 2017 to independently assess the proposals submitted to the FPTF to provide a faster payments solution in the United States. The QIAT assessed 22 proposals against 36 Effectiveness Criteria and the associated 125 sub-criteria. Sixteen of the twenty-two proposers have opted to be included in the final report from the FPTF to be made public later this year.

This report summarizes the QIAT's activities, shares the QIAT's observations on the submitted proposals, and outlines implications for the FPTF to consider in "implementing a safe, ubiquitous, faster payments capability." It also includes a summary of Task Force comments and the QIAT's response to those comments.

Contents

I. QIAT APPROACH

The QIAT assessments (shared and approved by the Advisory Group[16] and FPTF in March 2017) provide a rating against each of the 36 Effectiveness Criteria and describe how the proposal performed against each of the 125 sub-criteria. As agreed on with the Advisory Group representing the FPTF, there is no overall rating provided. The QIAT developed an assessment template utilizing a set of principles developed through working sessions with the Advisory Group and the Federal Reserve. These principles include:

1. "Lift all boats," not "pick a winner." The objective of the QIAT assessments was to improve each proposer's solution, not to select the best solution among the proposals. The QIAT evaluated each assessment against the FPTF Effectiveness Criteria and provided comments to proposers that indicated where the proposal could be improved relative to the Effectiveness Criteria.

2. Equal weighting of all Effectiveness Criteria and sub-criteria. As designed, the 36 Effectiveness Criteria and 125 sub-criteria are equally weighted and are not meant to be a set of minimum or maximum requirements. The QIAT thus did not impose any weighting of criteria. It is possible that proposed solutions may exceed the criteria; however, doing so may not result in a higher effectiveness rating.

3. Collaborative, not combative. The QIAT designed a process that involved and required a high level of collaboration with proposers and that allowed for the inclusion of additional information to support an optimized final assessment. The process involved multiple discussions with proposers: a Q&A session after a first assessment by the QIAT in which proposers, if they chose, could provide clarifications or further information; the opportunity to prepare a proposer response to the QIAT's preliminary assessment; and the opportunity to prepare a proposer response to Task Force comments prior to finalization of the QIAT assessment. The QIAT took into account all new information that was submitted *in writing* in order to document all information considered and maintain consistent transparency.

4. Openness to "conceptual but possible." Strategy 2 of the Federal Reserve's Strategies for Improving the U.S. Payment System involved identifying "effective approach(es)" for a faster payments capability. To support this strategy, the QIAT reviewed conceptual solutions not yet developed or in market using the defined Effectiveness Criteria. The QIAT requested a detailed description of how the solution would function as well as clearly stated assumptions that demonstrated that the proposer understood what would be required to deliver the solution.

5. Independent and transparent. The goal was for the QIAT and the Task Force to provide a rich set of perspectives to proposers and the public on improving the approaches to a faster payment solution. The QIAT was engaged to provide an independent assessment of each proposal rather than having the Task Force assess the proposals. The QIAT assessed proposals using only written material that proposers provided and were comfortable sharing in the public domain (i.e., no confidential or proprietary information). Task Force members were able to comment on the QIAT's independent assessments and to provide their own comments as desired.

The format of the QIAT assessments (shared and approved by the Advisory Group and FPTF in March 2016) reflects these objectives by having no overall rating, by providing ratings against each of the Effectiveness Criteria, and by including a rating rationale that documented how the proposal performed against each of the 125 sub-criteria.

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[16] The Advisory Group, comprised of 9 Steering Committee members from both the Faster Payments Task Force and the Secure Payments Task Force, represents the Task Forces to oversee the assessment process.

II. QIAT PROCESS AND PROPOSALS

The QIAT process was developed at a two-day working session with the Advisory Group held on March 31-April 1, 2016. The QIAT process was shared with the Task Force and proposers in person on May 18, 2016. Proposers who did not attend the FPTF meeting on May 18, 2016 could participate in a conference call to discuss the QIAT process on June 3, 2016.

The QIAT proposal review process can be outlined as follows:

Proposal Submission

1. Proposers sent proposals to QIAT email inbox.
2. QIAT confirmed that each proposer fulfilled all submission requirements.
3. QIAT checked for any conflicts of interest among team members and then assigned three QIAT members to each proposal.

Preliminary Draft Assessment

4. QIAT reviewed and assessed proposals individually and then met to discuss as a group and develop the Preliminary Draft Assessments for each proposal.
5. QIAT sent the Preliminary Draft Assessments to proposers, along with questions to the proposers to further clarify aspects of the solution.
6. QIAT held one-hour Q&A sessions with each proposer by phone to clarify the questions.
7. Proposers sent written responses to QIAT's questions.

Preliminary Assessment

8. QIAT updated the assessments individually and then as a group based on any new information provided in the proposers' written responses to the questions.
9. Proposers were sent the Preliminary Assessment and given an option to provide a written response to the QIAT's Preliminary Assessment.
10. Proposers opted in to distribution of their proposals to the FPTF and the Secure Payments Task Force (SPTF).

Task Force Comments

11. The FPTF and SPTF provided comments on proposals.
12. Proposers were given an option to provide a written response to both Task Forces' comments.

Final Assessment

13. QIAT updated the assessments individually and then as a group based on any new information provided in the proposers' response to the Preliminary Assessment, the FPTF and SPTF comments on the Preliminary Assessment and proposal, and the proposers' response to the Task Forces' comments.
14. Proposers were sent the Final Assessment and opted in to the inclusion of their proposal, all written documents related to the proposal, and the assessment of their proposal in the Final Report to be distributed to the public.
15. The Final Assessment and all related documents were distributed to the FPTF and SPTF.

At steps 1, 7, 10 and 14, the proposers confirmed that no proprietary or confidential information was included in their submissions to the QIAT.

QIAT TEAM STRUCTURE

The QIAT included six members who are payments experts from around the world, with three QIAT members assigned per proposal. To prevent any conflict of interest, the complete list of all proposers was shared with the QIAT before teams were defined. Since the total QIAT team consisted of six members, and review of each proposal required only three of these six, all proposals could be evaluated by core QIAT members, with no need for alternate assessors.

QIAT resources also included subject matter experts in four areas: payments security; operations and technology; fintech and payments innovation; and regulatory issues. To prevent any conflicts of interest, the proposer list was shared with SMEs prior to engagement. These experts were involved as appropriate to ensure a thorough QIAT response to every proposal. Each reviewed the proposal and assessment through his/her particular lens of expertise and provided additional commentary and/or questions for response by the proposer.

QIAT REVIEW APPROACH

A standard review template based on the 36 Effectiveness Criteria and 125 sub criteria was prepared and used to evaluate all proposals. Each QIAT member prepared an individual, written assessment of each proposal. The three QIAT members then met to discuss their individual review of each proposal.

The outcome of these discussions was agreement across QIAT members on ratings and rationale against the Effectiveness Criteria. Subject matter experts were also engaged to review and evaluate the proposal and to provide feedback and identify areas where additional clarification would be helpful. The individual assessments were synthesized into a single QIAT Assessment document for each proposer. The allocation of QIAT members to multiple proposals ensured consistent evaluations across proposals. Where appropriate, discussions involving multiple QIAT teams were held to ensure that similar solutions had been evaluated consistently.

PROCESS STRENGTHS AND CHALLENGES

The overall process had its strengths and challenges.

Strengths:

- Proposals came from a variety of proposers, resulting in a diversity of approaches and perspectives in the solutions. Proposals included both traditional and newer players in the payments market, and the payment system models proposed were wide-ranging.
- The process involved four rounds of written submissions. With each round, proposals improved based on QIAT feedback.
- The Effectiveness Criteria consisted of 36 criteria and 125 sub-criteria that were equally weighted, which yielded a thorough assessment that was consistent for every proposal.

Challenges:

- The inability to use confidential or proprietary information or keep proprietary information from becoming public may have prevented potential proposers from participating, and it may have affected the quantity of detail available to support QIAT and FPTF review.
- Requiring all solutions to be described in a written document only may have presented challenges for some solutions.

PROPOSALS

At the beginning of the process, the QIAT received 25 proposals submitted to the FPTF. Two of these proposals missed the April 30 deadline, and another submitted an incomplete proposal. Two more opted out of the proposer Q&A session after reviewing the QIAT's Preliminary Draft Assessment. One more opted out before their proposal was distributed to the FPTF on September 29. Three more proposers opted out of the final report, leaving 16 final proposals.

THE 16 PROPOSERS ARE:

DWOLLA	SHAZAM
HUB CULTURE	SWAPSTECH
INTERCOMPUTER	TCH/FIS
KALYPTON/ECCHO	THOUGHT MATRIX
MOMO	TOKEN
NABC/ICBA	UNIVERSITY BANK
NANOPAY	WINGCASH
RIPPLE	WORLD CURRENCY

III. OVERALL OBSERVATIONS ON THE STRENGTHS AND IMPROVEMENT AREAS FOR PROPOSALS

The 36 Effectiveness Criteria were grouped into six categories by the FPTF: Ubiquity, Efficiency, Safety and Security, Speed, Legal, and Governance. Based on the overall themes that emerged in the assessment of 16 proposals, the QIAT offers the following observations:

1. **Ubiquity**: The proposed solutions are generally accessible, as they support payments to and from all accounts at depository institutions and regulated non-bank account providers (often through a depository institution).

   However, many solutions delegate responsibility for the end-user's experience to the provider without providing strong guidelines to ensure a base level of consistency and predictability. Often, cross-border payments capability is not sufficiently addressed or is not addressed at all. Further, many of the proposed use cases concentrate on consumer payments more than business payments, and a number of solutions are solely or primarily focused on the point-of-sale use case.

2. **Efficiency**: The solutions' use of ISO 20022 as the payment format standard is prevalent, as is their use of APIs and open standards to enable competition and value-added services.

   Many solutions, however, do not enable end-users to switch providers easily or to use multiple providers. Moreover, the solutions' implementation timelines often underestimate the likely time required to scale payment infrastructure and gain widespread adoption, particularly when it requires significant changes to regulation, existing payments clearing and settlement infrastructure or bank operations.

3. **Safety and Security**: Many of the proposed solutions fulfill the need for payment authorization, payment finality, and end-user data protection by establishing a clear point of payment irrevocability and by providing the ability to send payments without knowing the payee's account number. Moreover, a number of solutions address exceptions handling, fraud detection and prevention, and dispute minimization/prevention.

   Yet some proposers do not seem to fully grasp the settlement process and its implications, including the difference between clearing and settlement, as well as how to manage settlement risk. Many solutions lack dispute and fraud *resolution processes* (focusing instead on eliminating the occurrence in the first place), and most focus on technical security while only lightly addressing operational and managerial controls.

4. **Speed**: Most solutions—except those that use ACH payments as they exist today—use technology that meets the speed requirements in the Effectiveness Criteria.

   However, most solutions also depend on providers and their processes for the speed of the payment; while these solutions technically enable speed, many do not establish provider requirements that would ensure speed of payment.

5. **Legal:** Many solutions rely on existing legal and regulatory frameworks as a foundation, yet few proposals describe the enhancements required for real-time payments. A few proposals— particularly those relying on digital fiat currencies—outline significant new legal requirements. Moreover, many proposals do not describe in detail a legal framework or payment system rules but instead state that these components will be developed in the future.

6. **Governance:** Several proposals express confidence that stakeholders in the Faster Payments Task Force can work together to define governance and would like to use the FPTF and Federal Reserve for governance. As with the legal criteria, however, many proposals lack a detailed description of the solution's governance framework and indicate instead that governance will be developed in the future.

IV. IMPLICATIONS FOR A FASTER PAYMENT SYSTEM(S) IN THE UNITED STATES

Some of the areas for improvement discussed above could have significant implications for a faster payment system that the FPTF should consider.

1. **Dependence on Providers**

   As mentioned, many solutions allow providers to control the end-user experience (presumably to allow for customization and competition) and do not provide minimum requirements for establishing a base level of usability/predictability. Similarly, several solutions depend on providers to enroll and authenticate users and do not provide guidelines for these processes to ensure security. Most of the proposed solutions enable real-time approval, clearing, funds availability, and visibility, but some do not require providers to adhere to any criteria related to payment speed.

   This dependence on providers raises several questions: How can the payment system balance innovation with the need for basic usability and predictability requirements for end-users? Such requirements are needed to ensure accessibility and adoption. Moreover, how can a faster payment system make sure that appropriate security measures are in place and adhered to for the enrollment and authentication of end-users across all participants? And how should the payment system balance the need for speedy payments for end-users with the need to prevent fraud, ensure compliance, and integrate with legacy bank processes and infrastructure?

2. **Insufficient Attention to Risk**

   The proposed solutions tend to focus on technology more than risk. They use leading technology for security, payment speed, and value-added services, but they typically have less detailed plans for risk, legal frameworks, payment system rules, and governance. As mentioned, some of the proposers do not seem to sufficiently understand settlement and the specific risks associated with this process.

   For dispute resolution, the proposed solutions often offer end-users limited recourse once a payment is sent. While significant focus is placed on dispute prevention, they tend to rely on providers and even the civil courts to resolve disputed payments. Few solutions provide a robust dispute resolution process within the solution itself.

   The lack of sufficient attention to risk raises multiple questions. How should existing legal frameworks be enhanced to support a faster payment solution? Who should set the payment system rules to ensure speed, safety, and security? To manage settlement risk in a real-time payment environment, how must settlement systems be enhanced, and what processes and/or tools are required? How quickly should settlement occur? And finally, how should a faster payment solution balance finality of payment with recourse for payers in cases of errors or disputes? Will end-users adopt a system that lacks recourse?

3. **Aggressive Timelines**

   The solutions' implementation plans are sound on technology deployment but often underestimate the time needed to scale infrastructure and to gain adoption by providers. Moreover, the value proposition and economics underpinning this assumed adoption are often unclear.

   As noted above, many of the proposals do not give much attention to cross-border payment capabilities. Among those that do have a plan for cross-border implementation, the plan will likely take a long time to gain adoption in other jurisdictions, as no solution has established traction in the market today.

   These implementation concerns raise more questions. How can implementation of a faster payment system balance the current demand for innovation and faster payments with the need to gain traction in adoption? As competitors race to meet these demands, the sheer number of available solutions may cause providers to step back and wait until a clearly viable solution emerges. Furthermore, should the market be left to solve the cross-border conundrum in its own time, or should coordinative efforts be arranged to accelerate bilateral or multi-lateral advancement in cross-border capabilities?

V. SUMMARY OF TASK FORCE SOLUTION-ENRICHING COMMENTS

Task Force members provided comments to proposers describing how proposals could be enhanced and identifying areas where more information and/or clarification would be beneficial. A summary of these Task Force comments is below:

Ubiquity

Several of the proposals submitted focus on a limited set of end-users or participants, or they support a limited number of use cases. For example, some are targeted at a single end-user segment (e.g. , the unbanked), some address only one use case (e.g. , P2P payments), and some limit participation to a specific set of providers (e.g. , financial institutions). Task Force members suggested that proposals that are not end-to-end should describe very clearly how the solution would integrate with existing or new payment system components to provide an end-to-end solution for end-users.

Solutions are encouraged to be as accessible as possible. This includes describing how the solution: 1) will support and engage new users, 2) could be extended to support multiple use cases and meet the needs of as many end-user segments as possible, and 3) will provide services through a wide range of participants (i.e. , access for non-FIs) and channels (e.g. , all smartphones, internet, face to face).

Solutions that do not support ISO 20022 at launch should provide details and timelines for the introduction of additional solution functionality.

Most solutions will not support cross-border transactions at launch. Solutions that intend to support cross-border payments should ensure that their proposals provide sufficient details regarding capabilities and timing.

Efficiency

Task Force comments suggest that proposers provide very clear information regarding implementation timelines. Proposals that define a significant role for the Federal Reserve should also consider alternative implementation options that do not rely on the central bank's involvement.

The proposal should clearly articulate the solution's value proposition for providers and end-users. Assumptions related to solution adoption should be plainly stated. It is recommended that proposers provide a detailed implementation roadmap, describe the integration effort required for participants, and define the steps to be taken to support integration and interoperability with existing infrastructure. Where applicable, proposers should describe how the solution will migrate to a faster payments infrastructure as such options become available.

Task Force members provided comments regarding the scalability of solutions, particularly for proposals that introduce a new payment scheme or leverage new or emerging technologies (e.g. , public cloud, blockchain). Proposals should describe how all aspects of a solution are positioned to accommodate increases in volume.

It is very important that proposals clearly describe processes to support payment exceptions and investigations. Several proposed solutions will leverage existing exceptions and investigations processes; where this is the case, proposers should define these requirements in the solution's rules and legal framework.

Solutions that introduce new payment systems should ensure that they have defined exception and investigations processes that can be enforced and monitored. Even with push payments and detailed notification messages, errors can occur, and it is important to protect end-users and to offer them a clear path to issue resolution.

Safety and Security

Solutions that leverage push payments effectively address settlement risk, but proposers are encouraged to think broadly regarding risk management capabilities. Task Force members suggest that proposers who intend to leverage existing processes for participant and/or end-user authentication and authorization clearly define all minimum requirements and participant responsibilities in the solution's rules.

For solutions that leverage existing settlement infrastructure that has defined operating hours (e.g. , ACH), Task Force members recommend describing in detail as to how risks will be managed for solutions that are available 24x7x365. It is very important that a solution supports the effective handling of disputed payments. Processes should be well-defined, and the proposal should outline how these processes will be monitored and enforced.

Several solution providers indicate that their solution will leverage existing fraud-sharing capabilities in market. Task Force members suggest that proposers clearly articulate how transaction information can be shared among participants, ideally in real time. Any assumptions associated with the sharing of fraud information should be plainly stated.

Task Force members suggest that proposers describe in detail the security controls and resiliency of public, cloud-based solutions (e.g. , Microsoft Azure) and blockchain/distributed-ledger-based solutions.

Speed

Several solutions are capable of achieving a Very Effective rating in the Speed criteria but do not require the same level of performance from participant organizations. This results in a gap between the provider's experience and the end-user's experience. Task Force members suggest that minimum performance requirements should be in place for system participants and should be clearly described in the solution's rules.

Solutions that rely on legacy settlement infrastructure may have trouble consistently meeting speed requirements. Proposers should clearly describe how payment speed will be achieved when supporting systems are not available on holidays and weekends. Proposers whose solutions rely on legacy infrastructure should articulate how the solution will migrate to real-time settlement options as these solutions become available in the market.

Legal and Governance

As most of the proposed solutions do not yet exist, Legal and Governance responses are largely descriptions of intended approaches. Task Force comments for proposers in these two areas are directed towards the crafting of detailed legal frameworks and clear payment system rules, as well as developing detailed, inclusive governance frameworks.

Regarding system rules, Task Force members suggest that that solutions not rely on existing capabilities. Rather, the solution's rules should clearly describe all minimum requirements that participants must meet and state how these requirements will be monitored and enforced. This is particularly important in the area of disputes and consumer protection.

Regarding governance, Task Force comments generally suggest that proposers design inclusive governance models that ensure that relevant stakeholder groups are represented and have the ability to provide input on key aspects of the solution. In solutions that include a role for the Federal Reserve, this role should be clearly articulated in both legal and governance frameworks.

VI. SUMMARY OF TASK FORCE ASSESSMENT COMMENTS

Task Force members also provided comments to the QIAT on the assessments of proposals against the Effectiveness Criteria. Overall, the Task Force was in agreement with the QIAT assessment of submitted proposals as demonstrated in the scoring summary below. There is strong alignment overall between Task Force ratings and QIAT ratings. Across all proposals, Task Force members strongly agreed or agreed with QIAT ratings at a rate of 90%.

FASTER PAYMENTS SOLUTION PROPOSALS ASSESSMENT SURVEY REPORTING
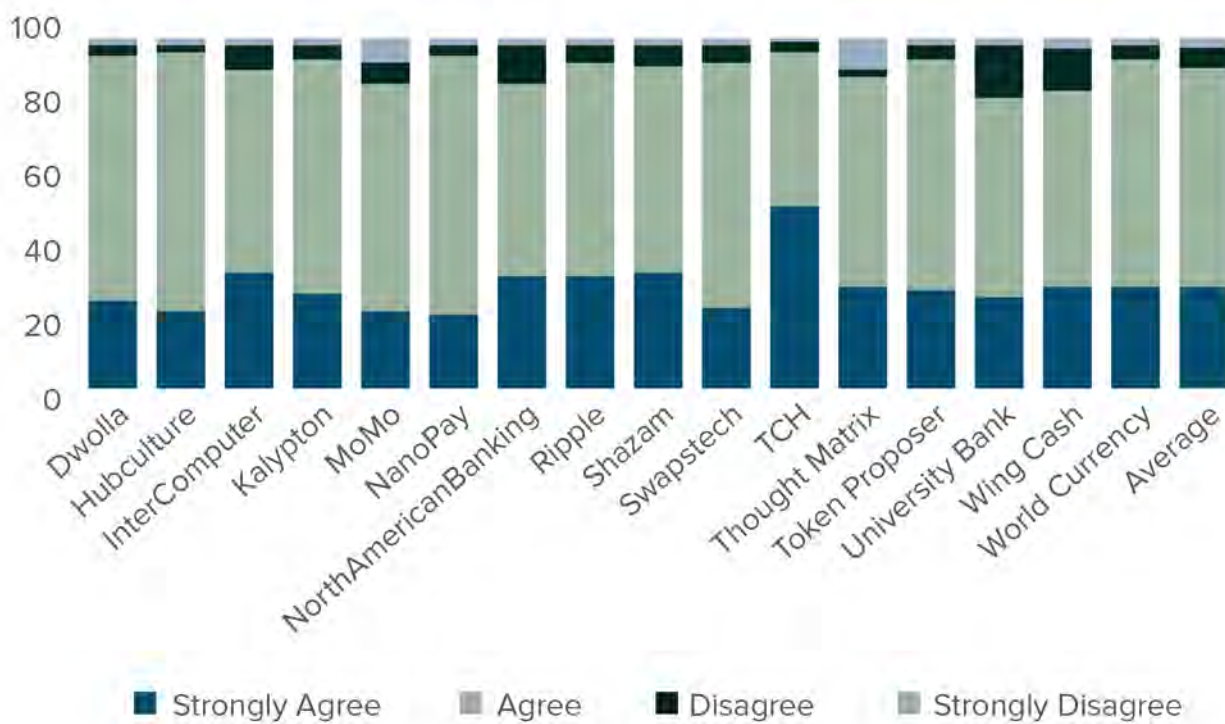
There was a wider variance in agreement for proposals that addressed a very specific user group (e.g., MoMo) or introduced a new payment system and/or digital currency (e.g., University Bank).

A summary of these Task Force comments is below:

Ubiquity

Several of the proposals focus on a limited set of end-users or participants (U.1, Accessibility) or support a limited number of use cases (U.6, Applicability to Multiple Use Cases). Examples include solutions that are targeted at a single end-user segment (e.g., the unbanked), that address only one use case (e.g., P2P payments), or that limit participation to a specific set of providers (e.g., FIs). Task Force members raised concerns that QIAT ratings for some proposals were generous in these areas, as proposals did not describe clearly enough how the solutions would evolve to address additional customer segments and/or use cases, how these solution providers would include multiple industry providers, and/or how the solutions would integrate with existing or future providers to support an end-to-end solution.

Efficiency

Comments from the Task Force members identified concerns about proposers' ability to implement their solutions (E.3, Implementation Timeline). In some cases, the QIAT was viewed as being too rigid in its ratings, and in other cases too lenient. Task Force members' concerns focused on the role to be played by the Federal Reserve and the value proposition for solution participants (e.g. , FIs). Concerns were also raised about these proposers' ability to implement their solutions in the timelines provided.

Task Force members further expressed concerns regarding some solutions' scalability (E.6, Scalability and Adaptability), particularly in proposals that introduce a new payment scheme or leverage new or emerging technologies (e.g. , public cloud, blockchain). In some cases, Task Force members felt that the QIAT was overly optimistic in its assessment of these proposals.

Safety and Security

Task Force members had diverging views on the ability of solutions that leverage existing infrastructure to support settlement (S.4, Settlement Approach). Some members believed that the QIAT was too stringent in its assessment of proposals that leverage existing infrastructure (e.g. , ACH), while others felt that the QIAT was too lenient. Members' views also differed on solutions that introduced new payment systems or digital currencies, and some members believed that the QIAT was too lenient in its rating of these conceptual solutions.

Similarly, there were diverging views on the rating of solutions that leverage existing dispute processes (S.5, Handling Disputed Payments) and authentication processes (S.10, End-user/Provider Authentication). Some members felt that solutions should define a clear process and/or minimum requirements rather than relying on the participants (usually financial institutions) to leverage existing processes.

Speed

Concerns raised by Task Force members related to solutions' reliance on legacy settlement infrastructure. Some members felt that the QIAT was too stringent in its assessment of proposals that leverage existing infrastructure (e.g. , ACH), while others thought that the QIAT was too lenient.

Legal and Governance

Task Force comments raised concerns that QIAT ratings on legal and governance criteria were too generous. Proposals that provided at least some evidence for meeting, or a plan to meet, the Legal and Governance criteria (often at some time in the future) were given a rating of "Somewhat Effective." Task Force comments indicated that proposals where no legal frameworks or rules (L.1, Legal Framework; L.2, Payment System Rules) were provided and governance was not clearly described should have been rated less favourably.

VII. QIAT RESPONSE TO TASK FORCE ASSESSMENT COMMENTS

The QIAT thanks the Task Force for its comments on the assessments. After a detailed review of all comments, the QIAT would like to address the themes that emerged. The QIAT hopes that this will provide transparency into the assessment approach to complement the rationale already provided in the assessments.

PROCESS

As a reminder of the QIAT process to develop the independent assessments, below is the process shared with the Task Force on May 18 in Chicago at the Faster Payments Task Force In-Person Meeting. This process was developed in concert with the Task Force Advisory group during a working session on March 31 – April 1 in Chicago. The overall goal of the assessment process was to improve proposals for implementing a safe, ubiquitous, faster payments capability in the United States. Throughout the process, QIAT members spent many hours evaluating each proposal against the Faster Payments Effectiveness Criteria to ensure that each proposer received a fair, rigorous assessment. In addition, a number of consistency checks were performed to ensure that assessment ratings were applied similarly.

1. Initial independent assessment. Each QIAT member assigned to a proposal conducted an individual assessment. The three QIAT members assigned to a proposal then met to discuss the individual assessments and came to an agreement on a QIAT assessment for each proposal. In addition, to obtain further detail and understanding of each solution, the QIAT developed a set of questions for the proposer.

2. Revised independent assessment taking into account the written proposer responses to Q&A. After proposers provided a written response to the QIAT questions, each QIAT member assigned to a proposal conducted another individual assessment, taking into account any new information provided by the proposers. The three QIAT members assigned to a given proposal met again to discuss the individual assessments and came to an agreement on a revised QIAT assessment for each proposal. In addition, the QIAT assessments were reviewed across all proposals and adjustments made as needed to ensure consistency in the assessment approach.

3. Final independent assessment taking into account the proposer response to the QIAT assessment and Task Force comments on the assessment. Each QIAT member assigned to a proposal conducted a final, individual assessment taking into account any new information provided in the proposer's response and any material information highlighted in the Task Force's comments that was not identified in the assessment. The three QIAT members assigned to a proposal then met to agree on a final QIAT assessment for each proposal.

TASK FORCE COMMENTS

The Task Force provided an impressive 1,571 ratings of the QIAT assessments across the solution proposals. Of the Task Force ratings, 1,435, or nearly 90%, either "Strongly Agreed" or "Agreed" with the QIAT assessments, covering all aspects of the Task Force demographics – Small, Medium, and Large Financial Institutions, Non-Bank Providers, Government End-Users, Business End-Users, Consumer Interest Organizations, and Other Stakeholders.

At the solution-assessment level, the Task Force aligned closely with the QIAT assessment ratings. While some comments suggested that certain Effectiveness Criteria ratings could have been different, there were no assessments where the Task Force's view was significantly different from the QIAT rating. For example, the Task Force might have thought that a particular rating should be "Effective" rather than "Very Effective."

The Task Force and QIAT shared similar views regarding the proposals' strengths. For example, there was consistent agreement about speed and settlement strengths and challenges. For conceptual designs and solutions, the Task Force's comments suggest alignment with the QIAT ratings and the process used to assess the solution's potential to meet the spirit of the Effectiveness Criteria.

Comments provided by the Task Force echoed the QIAT assessment ratings as they relate to solutions with conceptual designs, especially in instances where the solution would be enriched by providing additional detail. The comments indicated a need for more formal business rules, regulations, and governance details. Several were concerned with the assumption that the Federal Reserve would simply assume roles in the solution design, but expressed confidence in the Federal Reserve's ability to provide such function.

Below the QIAT addresses themes found in the Task Force's concerns about the assessments.

1. Assessment ratings

Task Force comments included specific ratings for proposals where an individual Task Force member believed a given rating should have been higher or lower. In most cases, the difference in rating between the Task Force and the QIAT was within one level (e.g., "Somewhat Effective" instead of "Effective" or vice versa). Most often, the rationale provided was related to a critical area in which the proposed solution fell short on the Effectiveness Criteria. However, it is important to note that, as agreed with the Advisory Group prior to the assessment process, the QIAT approach did not weight any one sub-criterion within the 36 Effectiveness Criteria more than another – the sub-criteria were considered equally important for determining the overall criteria rating. A rating of "Very Effective" means that each of the sub-criteria was met, "Effective" means that a majority of the sub-criteria were met, "Somewhat Effective" means that less than a majority of the sub-criteria were met, and "Not Effective" means that none of the sub-criteria was met. "Not Effective" ratings were rare, since most proposals offered met some part of the sub-criteria, even if minimally. If a solution met exactly half of the sub-criteria (e.g., two out of four), then the QIAT made a judgment call on whether it was "Effective" or "Somewhat Effective" for that criteria, taking into account the specifics of the proposal as well as consistency across proposals. The QIAT understands that Task Force members may have made a different judgment call from the QIAT.

For Effectiveness Criteria where the ratings were specified by the Task Force to align with specific requirements—as opposed to satisfaction of sub-criteria—the QIAT assessed proposals against those requirements. For the Speed criteria, the QIAT chose to assess proposals based on their capability to meet the speed requirements, acknowledging in the rationale that in many of the solutions, achieving the speed requirements relies on governance and provider enforcement.

2. End to end solutions

Task Force comments raised concerns about the solutions' ability to meet requirements for end-to-end solutions. Based on the Faster Payments Effectiveness Criteria, "a Solution is the collection of Components and supporting Parties that enable the end-to-end payment process. A faster payments Solution might include new Components, the adaptation of existing Components, and/or a combination of the two. Parties include any of the following: governing bodies, operators, Depository Institutions, Regulated Non-bank Account Providers, and third-party service providers." Given this definition from the Task Force, the QIAT viewed proposals as end-to-end solutions as long as the proposal explained how various Components and Parties would work together to deliver the payment process from initiation to reconciliation. As such, the proposer did not have to provide all new Components to be considered end-to-end. In fact, all proposals provided some new Component(s) while also using existing Components, such as bank infrastructure or existing networks, to deliver the

end-to-end payment process.

3. Support for a limited number of use cases or a limited set of end-users

Task Force comments raised concerns that QIAT ratings were too generous for proposals that did not support all use cases at launch, or were designed to address specific use cases or specific end-users (for example, the unbanked). The Faster Payments Effectiveness Criteria stated that, "The Proposal template will require Solution proposers to self-identify which use cases they are targeting and whether their Solution supports payments initiated by the Payer, the Payee, and/or a third party. The effectiveness of a given Solution will be assessed against each criterion with those use cases and payment initiation methods in mind."

As a result, the QIAT assessed each proposal against the Effectiveness Criteria for those targeted use cases and associated end-users of the solution and did not penalize proposers for a limited set of use cases or end-users, unless the specific criterion related to use cases or end-users. (For example, U.1, Accessibility includes a sub-criterion related to a specific set of end-users, and U.6, Applicability to Multiple Use Cases specifically related to target use cases).

4. Governance and Legal criteria

Task Force comments raised concerns that QIAT ratings on governance and legal criteria were too generous across proposals and in several cases should have been rated "Not Effective" as opposed to "Somewhat Effective." Many of the proposals provided broad outlines for these criteria but left it to a later time or to other parties to fully develop the details. Based on the Faster Payments Effectiveness Criteria, a rating of "Not Effective" means "The Solution does not satisfy these criteria," and a rating of "Somewhat Effective" means "The Solution partially satisfies these criteria." Since all proposals provided at least some evidence for meeting or a plan to meet the Governance and Legal criteria (often at some time in the future), the QIAT decided the "Somewhat Effective" rating was appropriate.

5. New payment systems and/or digital currencies

Task Force comments included concerns about the viability of a handful of proposals that introduced new technologies and/or the concept of digital currencies. The QIAT was open to different approaches for implementing a safe, ubiquitous, faster payments capability. As stated in earlier sessions, the QIAT considered new solutions with the mindset of "conceptual yet achievable" so as not to penalize applications of new technologies. The assessment was based on the proposer's ability to articulate a solution across all elements of the payment process, including key assumptions and how it would integrate with existing infrastructure over the near to mid-term in order to be viable. In addition to the three QIAT members assigned to a proposal, Subject Matter Experts reviewed proposals to assess the articulated solution, which was particularly important for the new payment systems that represent a radical departure from the current state.

6. Solutions with assumptions about a Federal Reserve role

Task Force comments raised concerns that the QIAT ratings were too generous for proposals that required the Federal Reserve to undertake activities and responsibilities that would diverge significantly from the Federal Reserve's role today. The QIAT chose not to make a judgment on what the Federal Reserve would or would not choose to do, but rather to assess each proposal based on the description of the Faster Payments solution, including the role that different Parties such as the Federal Reserve were expected to play in the end-to-end payment process. In fact, the proposal template itself created space for such assumptions to be articulated in an "Assumptions" section. Given that the goal is to "identify effective approaches for implementing a safe, ubiquitous, faster payments capability in the United States," the QIAT felt this approach to be both fair to proposers that brought forth different approaches and consistent with the objectives of the Task Force.

APPENDIX 2: THE SECURE PAYMENTS TASK FORCE

The Secure Payments Task Force (SPTF) was established in June 2015 to advise the Federal Reserve on payment security matters and coordinate with the Faster Payments Task Force (task force), as well as to determine priorities and then advance efforts for payment security improvements. The SPTF provides an open venue for *all* payment stakeholders (e.g. , card network operators, merchants, financial institutions, government agencies, payment providers / processors, fintech companies, consumer groups, etc.) to engage in public-private collaboration with the intent of improving payment system security in the United States.

SPTF participants are working collaboratively to educate the industry about payment processes and related security considerations, challenge the industry to strengthen security controls and promote enhanced information sharing across key payment stakeholders for the mitigation and reduction of payment risk and fraud. Below is a high-level overview of SPTF security resources, planned for publication to the payments industry beginning in 2017[17].

PAYMENT USE CASES

Serve as an educational reference guide for payments and security practitioners

The Payment Use Cases map out the life-cycle of a payment for eight select payment types: ACH, card not present, card PIN, card signature, check, contactless, wallet and wire. For each payment type, the use cases include an overview of the payment flow and operation, security methods and associated risks, an inventory of sensitive payment data and associated risks if that data were exposed, and an overview of applicable payment security standards along with potential gaps and issues.

These use cases are intended to provide a common foundation of knowledge for the payments industry, including payment and security practitioners, to understand the landscape as it is today and weigh the associated risks.

PAYMENT SECURITY FRAMEWORK

Contains practical, risk-based guidance and advice on payment identity management and data protection practices

The Payment Security Framework is a comprehensive resource that provides security guidance to payments stakeholders in efforts to move the industry towards evaluating and implementing strengthened payment security practices. The framework includes the following components: stakeholder perspectives, payment security principles, baseline and recommended security practices, and a forward-looking perspective on payment security.

The stakeholder perspectives anchor the framework by providing valuable insights for users of the framework when determining specific actions to take for their respective organizations. The payment security principles serve as foundational guidance in developing baseline and recommended security practices. The forward-looking perspective outlines requests to the industry and planned actions of the SPTF. It is envisioned that this framework can be used by organizations within the payments industry to assess the strengths of their existing security practices and challenge them to increase their security posture as outlined in the recommended practices and look forward.

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[17] All efforts described in this appendix are considered works in progress and are subject to change at the direction of the SPTF. Final deliverables and timelines may vary from those described in this appendix.

INFORMATION SHARING DATA SOURCES

Designed to improve awareness and implementation of inclusive cybersecurity and fraud information sharing

The Information Sharing Data Sources is a consolidated list of fraud and risk information sharing data sources across payment types and payment system participants, categorizing the sources as freely available, subscription-based, or proprietary. This list provides a comprehensive, centralized resource for payment stakeholders to address information sharing gaps in the industry today. The SPTF envisions this list will be published in a web-based format, and will be made freely and publicly available. Curatorial requirements have been drafted as a step toward ensuring the information is properly maintained and managed in the future.

This resource will improve access to actionable information, and enhance the effectiveness of fraud prevention efforts by information management and payment security professionals.

STANDARD FRAUD REPORTING REQUIREMENTS

Creates a structure to standardize fraud metrics and reporting by payment type across the industry

One of the desired outcomes of the SPTF is to enhance the availability of payments industry fraud and risk data that can be easily, accurately, consistently and confidently interpreted and acted upon by payment industry participants. As part of the efforts to achieve this desired outcome, SPTF participants are focused on developing a defined set of requirements and evaluating the identification/creation of a channel to centralize the capture, analysis and reporting of suspected and confirmed fraud data and other financial crime information by segment and payment type across the payments industry.

It is believed that standard fraud reporting will become a critical tool for monitoring business processes within the banking community as well as among non-bank payment service providers and business end users.