Payment System Improvement - Public Consultation Paper

The Federal Reserve Banks | **September 10, 2013**

The U.S. payment system is undergoing a remarkable period of change, driven by rapid adoption of technology and evolving end-user expectations. Going forward, opportunity exists to improve speed and efficiency of payments and to maintain payment system safety in the face of escalating threats. The Federal Reserve Banks believe that collaboration and engagement with the industry is the foundation of any enduring strategic improvements to the U.S. payment system and look forward to public input to this consultative paper.

Introduction

Payments in the United States and around the world are undergoing a remarkable period of change that may have been unimaginable twenty years ago. Payment preferences are evolving rapidly due to demographic shifts and application of new technology, among other factors. The payment system is becoming more complex, comprised of incumbents, such as banks and processors; new entrants, such as nonbank innovators; and end users - individuals, corporations, and governments - that have increasingly benefited from innovations focused on their payment needs. In such an environment, ongoing innovation is necessary to ensure safe, efficient, and accessible payments that support economic activity and help maintain the global competitiveness of the United States.

Industry adoption of new payment services and technology in this country has been driven mostly by market forces rather than government direction. Yet history shows that it is sometimes beneficial for a central coordinating body to take steps to facilitate cooperation to address network or coordination challenges that otherwise impede innovation, efficiency, and other public benefits. The Federal Reserve Banks believe that ubiquitous, open payment networks and/or broadly interoperable networks best serve the public interest because the more members of society who can be reached with a payment instrument, the more valuable the payment instrument is to each of the other members of society. The breadth and complexity of the U.S. landscape make it especially hard to coordinate payment innovations and achieve ubiquity.[1] The Federal Reserve Banks see one of their roles as bringing the industry together to foster coordination and, where appropriate, to drive payment system improvement.

The purpose of this public consultation paper is:

1. To articulate the Federal Reserve Banks' perspective on:
    - Key gaps and opportunities in the current payment environment; and
    - Desired outcomes that close these gaps and capture these opportunities.
2. To solicit broad industry input on:
    - The Federal Reserve Banks' perspectives on gaps, opportunities, and desired outcomes articulated in this paper;
    - Potential strategies and tactics to shape the future of the U.S. payment system; and
    - The Federal Reserve Bank's role in implementing these strategies and tactics.

Questions near the end of this document are provided for those who would like to respond.

[1] For example, in the United States there are about 14,000 depository institutions, hundreds of payment service providers, and dozens of proprietary payment networks.

Federal Reserve Bank Strategic Direction in Payments

The Federal Reserve Banks updated their strategic direction in payments in 2012.[2] At the heart is a vision to improve the speed and efficiency of the U.S. payment system from end-to-end over the next decade while maintaining a high level of safety and accessibility. End-to-end means from the point of payment origination to the point of receipt, including payment notification and reconciliation. This vision was crafted based on both Federal Reserve Bank internal analysis of payment evolution and external consultation with stakeholders.

Also, the Federal Reserve Banks' vision encompasses the broader payments industry, meaning all organizations involved in delivering payment services to end users, including depository institutions and their trade associations, nonbank service providers, payment processing companies, and payment consultants. An inclusive vision is important because industry collaboration and engagement is essential to any enduring strategic improvements to the U.S. payment system. Moreover, the most promising ideas for payment innovations and strategic change often result from ongoing dialogue among diverse industry participants.

The current vision focuses on the end-to-end payment process, whereas past Federal Reserve Bank payment strategies focused on interbank issues. This expanded vision seeks to ensure that payment system improvements meet the needs of *end users* who are the ultimate beneficiaries of the payment system; thus, their needs should drive improvements. End users have access to powerful communications technologies, and this is changing not only how they want to make payments, but also how they manage their finances. The next-generation payment system must accommodate these evolving end-user payment preferences.

In many ways, today's payment system does accommodate the changing payment preferences of end users. New electronic networks are proliferating, including networks for person-to-person transfers, online merchants, business trade payments, and others. However, many of these networks do not have a broad base of members, which makes it inconvenient or impossible for in-network end users to make or receive payments to or from out-of-network end users. By contrast, legacy payment systems are nearly ubiquitous and allow end users to send payments to almost any receiver, without requiring the receiver to enroll in the system to retrieve the payment.[3] The Federal Reserve Banks are interested in fostering an environment where innovative payment services can be developed to meet the changing payment preferences of end users without sacrificing the efficiency advantages of near-ubiquity.[4]

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[2] Speech given by Sandra Pianalto, President of the Federal Reserve Bank of Cleveland: http://www.clevelandfed.org/For_the_Public/News_and_Media/Speeches/2012/Pianalto_20121022.cfm

[3] Many legacy payment types require a transaction account, which may be cumbersome to establish. However, once a transaction account is established, the end user has access to a wide array of legacy payment services.

[4] Over 90% of consumers have a transaction account, giving them access to bank-account based payments such as checks, funds transfers, ACH payments, and debit cards (*Consumers and Mobile Financial Services 2013*, Federal Reserve Board). Payment cards are also broadly available; over 90% of consumers use some type of payment card in a given year (*2009 Survey of Consumer Payment Choice*, Federal Reserve Bank of Boston), and an increasing percentage of merchants accept payment cards.

Gaps / Opportunities in Today's Payment System

The Federal Reserve Banks conducted a gap and opportunity analysis of the payment environment to understand key areas where the payment system could be improved relative to the vision of safe and accessible but faster and more efficient payments on an end-to-end basis. Results of this analysis, shaped by industry discussion, are not surprising as they are comparable to the results of a similar gap analysis conducted in 2002.[5] The following are the key gaps and opportunities identified:

1. Check writing persists because checks have important attributes, including ubiquity and convenience, which are not well replicated by electronic alternatives for some transactions. Many receivers of checks prefer other forms of payment but exercise little control over the sender to request a preferred form of payment.
2. In a world where several other countries are moving to ubiquitous near-real-time retail payment systems, the U.S. payment system does not have this capability.[6] The U.S. payment system has begun to migrate incrementally toward faster payments primarily through private-sector innovation; but these innovations, when considered in total, have not resulted in a ubiquitous near-real-time system.
3. Most recent payment innovations have yet to gain significant market penetration and are still limited-participation systems where both sender and receiver must join. Legacy payment systems tend to be more ubiquitous, making them efficient and accessible for those who already maintain a transaction account with their bank (payers and payees of any transaction).
4. Some features that are desired increasingly by end users are generally lacking in many legacy payment systems, such as –
    - A real-time validation process assuring the payee that the payer's account exists and it has enough funds or available credit to cover the payment;
    - Assurance that a payment will not be returned or reversed;
    - Timely notification to the payer and payee that the payment has been made;
    - Near-real-time posting / availability of funds to both the payer's and payee's accounts; and
    - Masked account details, eliminating the need for end users to disclose bank account information to each other.

    Payment cards and wire transfers possess some, but not all of these features; check and ACH payments generally lack these features.[7]
5. In general, cross-border payments from and to the United States are slow, inconvenient, costly, and lack transparency regarding fees and timing.

[5] See Staff Study 175, *The Future of Retail Payment Systems: Industry Interviews and Analysis*, Board of Governors of the Federal Reserve System, December 2002.

[6] Throughout this document, references to near-real-time payments are intended to mean retail and/or general purpose payments. Retail or general purpose payments include business trade payments, personal transfers, consumer bill payments, tax payments, salary payments, point-of-sale payments, online payments, and the like. Retail payments do not include large payments sent on high value payment systems to settle transactions between financial institutions or other systemically important activity.

[7] Some of these concepts are adapted from *The Need for Real-Time Payments in the US*, RPGC Group, June 2013.

6. Mobile devices have potential to transform wide ranging aspects of business and commerce, including the payment. Digital wallet applications on mobile devices provide merchants with valuable information that can be leveraged for commercial purposes such as consumer-specific location information, transaction history, and other context-specific data.[8] With some digital wallet applications, the payment instrument is selected during the initial set-up phase and the payment takes place in the background thereafter, reducing the visibility and choice of payment instrument at the point of sale. Payment service providers are seeking to define their service offerings in this new world.
7. Businesses (especially large ones) have payment and accounting systems that are complex and costly to change, making it difficult to achieve automated, straight-through processing of invoices, payments, and remittance information.
8. Consumer fears about payment security sometimes inhibit adoption of electronic payments.[9]

The gaps and opportunities outlined above can be summarized in an over-arching problem statement for the U.S. payment system:

> *End users of payment services are increasingly demanding real-time transactional and informational features with global commerce capabilities. Legacy payment systems provide a solid foundation for payment services; however, some of these systems (e.g., check and ACH) rely on paper-based and/or batch processes, which are not universally fast or efficient from an end-user perspective by today's standards.[10] The challenge for the industry is to provide a payment system for the future that combines the valued attributes of legacy payment methods – convenience, safety, and universal reach at low cost to the end user – with new technology that enables faster processing, enhanced convenience, and the extraction and use of valuable information that accompanies payments.*

[8] For a discussion of the mobile payments opportunity, see, for example, Michael Katz, *Increasing Connectedness and Consumer Payments: An Overview,* available at http://www.kansascityfed.org/publicat/pscp/2012/Session-1.pdf.

[9] The Federal Reserve Banks have additional analysis on payment system safety underway. As other key safety gaps are identified, the Federal Reserve Banks will work with the industry to determine which industry bodies are best suited to address them.

[10] For example, most check and ACH payments do not settle on the day they are submitted for processing. These settlements generally occur the next day, although some ACH originators choose to value-date the transactions for settlement two days after processing.

Desired Outcomes

The Federal Reserve Banks have identified five desired outcomes to be achieved within ten years to address the gaps and opportunities identified above. The outcomes reflect the Federal Reserve Banks' internal analysis and input from a variety of industry stakeholders.

> Desired outcome 1: Key improvements for the future state of the payment system have been *collectively* identified and embraced by payment participants, and material progress has been made in implementing them.

This outcome is critical to achieving the desired future state and is fundamental to the remaining desired outcomes. A collective and collaborative approach to improve the payment system will significantly increase the probability of successful improvements. The Federal Reserve Banks desire to be a catalyst for collaboration and have hosted meetings and forums with the industry to gather input on the strategic vision. Similar meetings will continue as the Federal Reserve Banks work closely with the industry on specific tactics to achieve the vision. Also, Federal Reserve Banks will continue to support industry-focused work groups such as the Remittance Coalition and the Mobile Payments Industry Work Group. These and other industry groups provide valuable forums for discussing payment system gaps and possible solutions for addressing them.

> Desired outcome 2: A ubiquitous electronic solution(s) for making retail payments exists that does not require the sender to know the bank account number of the recipient. Confirmation of good funds will be made at the initiation of the payment.[11] The sender and receiver will receive timely notification that the payment has been made. Funds will be debited from the payer and made available in near real time to the payee.

Today, U.S. consumers can't make a near-real-time payment in a convenient and cost effective way from any bank account to any other bank account. Multiple limited-participation systems have emerged in recent years designed to meet this need, yet it remains inconvenient for a sender in such a system to send money in near real time, with confirmation of good funds and timely notification, to a receiver outside the system.

The Federal Reserve Banks believe that a near-real-time payment capability may ultimately be a beneficial improvement to the payment system that supports economic activity in the United States. This belief is based in part on the emergence of near-real-time payment systems in several other countries, and the expectation that demand for transactional immediacy in the United States will continue to grow. Benefits of near-real-time payments include the ability to make last-minute payments of all types; enhanced cash management for consumers, businesses, and governments due to quicker confirmation of good funds; reduction in fraud for both banks and end users; and a quicker alternative to paper checks for personal transfers. Moreover, a near-real-time payment platform may spur other innovations, particularly in mobile payments, and may enhance U.S. global economic competitiveness.

[11] 'Good funds' means that the payer's account is valid, funds or available credit are sufficient to cover the payment, and therefore, the payment will not be reversed for lack of funds.

A ubiquitous system for near-real-time payments would require changes to industry infrastructure, either by enhancing an existing payment system or establishing a new one. Funding for the investments required may be hard to obtain, given competing priorities such as complying with new mandates. Payment industry participants that are planning to modernize their core back-end systems may be able to incorporate near-real-time features more cost effectively. Regardless, the actual cost to implement near-real-time payments cannot be known until specific solutions are identified. Once known, the benefits of near-real-time payments must be weighed against the costs of implementation before acting. While initial investment may be significant, benefits will likely accrue over many years.

> Desired outcome 3: Over the long run, greater electronification and process improvements have reduced the average end-to-end (societal) costs of payment transactions and resulted in innovative payment services that deliver improved value to consumers, businesses, and governments.

Since the mid-1990s, the use of paper checks has declined steadily. Based on data from the 2009 Federal Reserve Payments Study, almost 80 percent of noncash general-purpose payments were made electronically. Yet billions of checks are still written today, for all types of payments. The largest share of checks is consumer bill payments, followed closely by business trade payments and business payments to consumers. Fewer checks are written for personal and point-of-sale payments, yet the annual total of these categories is still in the billions. Although check writing is expected to continue to decline, the Reserve Banks believe that more aggressive actions may be needed to accelerate the transition to ubiquitous electronic payment alternatives.

Although greater electronification of retail payments is a desired outcome, paper currency and coins continue to be valued by consumers as a fast and efficient medium of exchange. Cash is also an important contingency payment method following natural disasters and other contingency events and an accessible payment method for anybody, whether or not they maintain a bank account. Unlike paper checks, use of currency has held steady in recent years and is expected to remain an important component of the U.S. payment system, even as innovations emerge that provide convenient substitutes.

> Desired outcome 4: Consumers and businesses have better choice in making convenient, cost-effective, and timely cross-border payments from and to the United States.

End-user demand for cross-border payments has increased due to globalization of trade and labor. Today, both personal and business cross-border payments typically involve much higher transaction fees and longer processing times than domestic payments. As globalization accelerates, the need for fast and efficient cross-border payment solutions will continue to increase.

> Desired outcome 5: The Federal Reserve Banks have collaborated, as appropriate, with the industry to promote the security of the payment system from end-to-end amid a rapidly evolving technology and threat environment. In addition, public confidence in the security of Federal Reserve financial services has remained high.

New ways of making payments and advanced fraud schemes and technologies present new risks and challenges to maintaining public confidence in the payments system. Maintaining the confidentiality of payment information from end-to-end, such as by preventing data breaches, is made more difficult as complexity and interconnectedness of networks have increased. The impact of a significant fraud event, cyber-attack, or natural disaster on the public's confidence may adversely impact the flow of commerce that is increasingly electronic or "digital."

Questions for the Public

The Federal Reserve Banks are seeking input from payment system providers and end users on how to improve the payment system. The questions below are designed to elicit reactions to the Federal Reserve Banks' views on payment system gaps, opportunities and desired outcomes. Public input is also sought on the potential role for the Federal Reserve Banks in payment system improvement, and tactics to guide future direction. Respondents are encouraged to answer as many or as few questions as desired, based on their interest and expertise, and to supplement their responses with any other general perspectives on payment system improvements. To respond to these questions or to see the written responses of others, please visit FedPaymentsImprovement.org. Responses may be submitted until **December 13, 2013**.

General

Q1. Are you in general agreement with the payment system gaps and opportunities identified above? Please explain, if desired.

i. What other gaps or opportunities not mentioned in the paper could be addressed to make improvements to the U.S. payment system?

Q2. Are you in general agreement with the desired outcomes for payment system improvements over the next 10 years? Please explain, if desired.

i. What other outcomes should be pursued?

Q3. In what ways should the Federal Reserve Banks help improve the payment system as an operator, leader, and/or catalyst?

Ubiquitous near-real-time payments

Q4. In discussions with industry participants, some have stated that implementing a system for near-real-time payments with the features described in the second desired outcome (ubiquitous participation; sender doesn't need to know the bank account number of the recipient; confirmation of good funds is made at the initiation of the payment; sender and receiver receive timely notification that the payment has been made; funds debited from the payer and made available in near real time to the payee) will require coordinated action by a public authority or industry group. Others have stated that current payment services are evolving toward this outcome and no special action by a public authority or industry group is required.

i. Which of these perspectives is more accurate, and why?
ii. What other perspective(s) should be considered?

Q5. The second desired outcome articulates features that are desirable for a near-real-time payments system. They include:

a. Ubiquitous participation
b. Sender doesn't need to know the bank account number of the recipient
c. Confirmation of good funds is made at the initiation of the payment
d. Sender and receiver receive timely notification that the payment has been made
e. Funds debited from the payer and made available in near-real time to the payee

i. Do you agree that these are important features of a U.S. near-real-time system? Please explain, if desired.
ii. What other characteristics or features are important for a U.S. near-real-time system?

Q6. Near-real-time payments with the features described in the second desired outcome could be provided several different ways, including but not limited to:

a. Creating a separate wire transfer-like system for near-real-time payments that leverages the relevant processes, features, and infrastructure already established for existing wire transfer systems. This option may require a new front-end mechanism or new rules that would provide near-real-time confirmation of good funds and timely notification of payments to end users and their financial institutions.
b. Linking together existing limited-participation networks so that a sender in one network could make a payment to a receiver in another network seamlessly. This option may require common standards and rules and a centralized directory for routing payments across networks.
c. Modifying the ACH to speed up settlement. This option may require a new front-end mechanism or new network rules that would provide near-real-time confirmation of good funds and timely notification of payments to end users and their financial institutions. Payments would be settled periodically during the day.
d. Enhancing the debit card networks to enable ubiquitous near-real-time payments.
e. Implementing an entirely new payment system with the features described in the second desired outcome above.

i. What would be the most effective way for the U.S. payment system to deliver ubiquitous near-real-time payments, including options that are not listed above?
ii. What are the likely pros and cons or costs and benefits of each option? What rule or regulation changes are needed to implement faster payments within existing payment processing channels?
iii. Is it sufficient for a solution to be limited to near-real-time authorization and confirmation that good funds are on their way, or must end-user funds availability and/or interbank settlement take place in near-real time as well?
iv. Which payment scenarios are most and least suitable for near real-time payments? (B2B, P2P, P2B, POS, etc.)

Q7. Some industry participants have said that efforts to make check payments easier to use, such as by enabling fully electronic payment orders and/or by speeding up electronic check return information, will incrementally benefit the payment system. Others argue the resources needed to implement these efforts will delay a shift to near-real-time payments, which will ultimately be more beneficial to the payment system. Which of these perspectives do you agree with, and why?

Q8. How will near-real-time payments affect fraud issues that exist with today's payment systems, if at all?

i. Will near-real-time payments create new fraud risks? If yes, please elaborate on those risks.

Q9. To what extent would a ubiquitous near-real-time system bring about pivotal change to mobile payments?

Q10. What would be the implication if the industry and/or the Federal Reserve Banks do not take any action to implement faster payments?

i. What is the cost, including the opportunity cost, of not implementing faster payments in the United States?

Q11. To what extent will the industry need to modernize core processing and other backend systems to support near-real-time payments?

i. What is the likely timeframe for any such modernization?

Q12. Some industry participants suggest that a new, centralized directory containing account numbers and routing information for businesses and/or consumers, to which every bank and other service providers are linked, will enable more electronic payments. A sender using this directory would not need to know the account or routing information of the receiver.

i. What are the merits and drawbacks of this suggestion?
ii. What is the feasibility of this suggestion?

Electronification

Q13. Some industry participants say that check use is an enduring part of the U.S. payment system and that moving away from checks more aggressively would be too disruptive for certain end users.

i. Is accelerated migration from checks to electronic payment methods a high-priority desired outcome for the U.S. payment system? (Accelerated means faster than the current trend of gradual migration.)
ii. Please explain, if desired.
iii. If yes, should the Federal Reserve Banks establish a target for the percent of noncash payments to be initiated via electronic means, by a specific date? For example: "By the year 2018, 95% of all noncash payments will be made via electronic means."
iv. What is the appropriate target level and date?

Q14. Business-to-business payments have remained largely paper-based due to difficulties with handling remittance information. Consumer bill payments also are heavily paper-based due to the lack of comfort some consumers have with electronic alternatives. In addition, many small businesses have not adopted ACH for recurring payments due to technical challenges and/or cost constraints. The payment industry has multiple efforts underway to address these issues.

i. To what extent are these efforts resulting in migration from checks to other payment types?
ii. What other barriers need to be addressed to accelerate migration of these payments?
iii. What other tactics, including incentives, will effectively persuade businesses and consumers to migrate to electronic payments?
iv. Which industry bodies should be responsible for developing and/or implementing these tactics?

Cross-border payments

Q15. To what extent would the broader adoption of the XML-based ISO 20022 payment message standards in the United States facilitate electronification of business payments and/or cross-border payments?[12]

Q16. What strategies and tactics do you think will help move the industry toward desired outcome four - consumers and businesses have greater choice in making convenient, cost-effective, and timely cross-border payments?

Safety

Q17. Payment security encompasses a broad range of issues including authentication of the parties involved in the transaction, the security of payment databases, the security of software and devices used by end users to access payment systems, and security of the infrastructure carrying payment messages.

i. Among the issues listed above, or others, what are the key threats to payment system security today and in the future?
ii. Which of these threats are not adequately being addressed?
iii. What operational or technology changes could be implemented to further mitigate cyber threats?

Q18. What type of information on threat awareness and incident response activities would be useful for the industry?

i. How should this information be made available?

Q19. What future payment standards would materially improve payment security?

i. What are the obstacles to the adoption of security-related payment standards?

[12] For information on ISO 20022, see, for example, http://www.iso20022.org/faq.page.

Q20. What collaborative actions should the Federal Reserve Banks take with the industry to promote the security of the payment system from end to end?

Q21. Please share any additional perspectives on U.S. payment system improvements.

Conclusion

The U.S. payment system is undergoing a remarkable period of change, driven by rapid adoption of technology and evolving end-user expectations. Going forward, opportunity exists to improve speed and efficiency of payments and to maintain payment system safety in the face of escalating threats. The Federal Reserve Banks believe that collaboration and engagement with the industry is the foundation of any enduring strategic improvements to the U.S. payment system.

We look forward to public input to this consultative paper as we jointly explore the most promising ideas for payment system improvements.