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CGI Response to Payment System Improvement – Public Consultation Paper

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Document Information

The enclosed information is submitted to the Federal Reserve System for the purpose of assisting the Federal Reserve Banks in its evaluation of the subject matter herein. CGI has made reasonable endeavors to determine that statements contained in this document are correct. Notwithstanding, this document is for information purposes only and is not legally binding. Any and all commitments will be the subject of a future formal agreement.

Who is CGI

Founded in 1976, CGI is a global IT and business process services provider delivering high-quality business consulting, systems integration and outsourcing services. With 69,000 professionals in 40 countries, CGI has an industry-leading track record of on-time, on-budget projects, aligning our teams with clients' business strategies to achieve top-to-bottom line results.

Acknowledgements

The thoughts and ideas presented herein are a compilation of the perspective and experiences of senior CGI payments thought leaders across the globe:

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Executive Summary

CGI is pleased to respond to the Federal Reserve Banks Payment System Improvement – Public Consultation Paper. In responding to the document, CGI has drawn on its experience in the Faster Payments program in the U.K., along with its extensive years of introducing and supporting innovative changes in payments systems across the globe, to apply to the U.S. market.

The U.K. Faster Payments Service (FPS) is a same day clearing and settlement system to accelerate the processing and settlement of low-value payments. It caters for one-off internet and telephone banking transactions and standing orders. FPS operates alongside the existing BACS (batch based, 3 day clearing system), CHAPS (RTGS) and C&CCC (check and credit clearing) payment schemes.

Many consulting firms were involved to some extent or another in the Faster Payments program, providing test support, Project Management Office functions, development resources or implementation management within individual banks, but only one organization, CGI, can legitimately claim to have been involved in all of these areas, as well as leading the development of the functional specification for the Central Infrastructure. CGI was engaged to work with VocaLink, the banks' chosen supplier of the central infrastructure for Faster Payments, and the U.K. Payments Council (APACS), the U.K.'s payment trade association, to produce the design for the new service. CGI returned with a design that reduced the time taken for a payment to be processed through the system from 3 days to approximately 15 seconds, with funds being made available to the beneficiary within a maximum of 2 hours, significantly improving on the minimum stated requirement.

Our detailed analysis of the infrastructure, the test methodology and testing scope, as well as the overall project structure, resulted in a number of major recommendations. The most significant of which was to postpone the go live date by approximately six months to ensure a successful public launch of the service.

The responses in this paper are designed to be a starting point for discussion. We welcome feedback and dialogue and providing support in another evolution in the payments system.

General

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

Although CGI is in general agreement with the gaps and opportunities in the U.S. payment system identified by the Federal Reserve Banks, a few areas of differences are highlighted below.

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.

While it is true that checks persist in the U.S. due to their ubiquity, in practice, senders continue to make the bulk of their disbursements by paper checks primarily due to inertia. Checks are an instrument that works well for a specific demographic of consumers in providing an ease and a level of comfort, including those characteristics associated with spend tracking and management. Notably, check imaging and check conversion are helping to drive paper out of the system for consumer payments (in contrast to business checks that are not eligible for conversion).

In parallel, for businesses, supplier dynamics can hinder the migration to e-payments where checks work satisfactorily, though not optimally. Studies show that many receivers are reluctant to share their bank account information with other than established, or trusted parties.[1] More importantly, accounting and auditing processes have been built around the check, which provides the remittance detail companies want and that many electronic payments continue to lack. Coupled with the paucity of resources, especially in mid and small sized businesses, is another roadblock to migrating to e-solutions that would facilitate automation and reconciliation of payments.

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. 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.

CGI agrees that only pockets of near real-time retail payments have emerged in the U.S. – from the same day offering by the Federal Reserve Banks, bilateral agreements between certain financial institutions that have significant amount of ACH transactions among them (e.g., Bank of America, Wells Fargo, and JP Morgan Chase) to non-bank services such as Fiserv's Popmoney and FIS PayNet. However, looking at recent advances in real-time payment systems across the

[1] Quibria, Nasreen. "Global Payments: Maximizing Cash Flow with Electronic Payments and Process Automation." Aberdeen Group. May 2010.

globe, these are typically not led through private sector innovation, but rather by intervention from market regulators, such as in the case of U.K.'s Faster Payments, Singapore's G3 scheme, and Australia's New Payment Platform. Evidence also suggests that the pure market driven innovation does not necessarily deliver results and achieve ultimate ubiquity as illustrated by the commercial challenges faced by the eventual failed MAMBO project that was in development by the major banks and BPAY until mid 2011 in Australia.[2]

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).

In general, CGI agrees with this statement. The U.S. market continues to remain fragmented with innovations like the decoupled debit programs, which leverage existing rails, or the patchwork of mobile initiatives that are notably built on credit and debit card systems. Even PayPal, which revolutionized online payments, makes use of the more ubiquitous legacy payments systems.

4. Some features that are desired increasingly by end users are generally lacking in many legacy payment systems, such as –

- **o 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;**
- **o Assurance that a payment will not be returned or reversed;**
- **o Timely notification to the payer and payee that the payment has been made;**
- **o Near-real-time posting / availability of funds to both the payer's and payee's accounts; and**
- **o 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.

CGI supports, in principle, the desired features as outlined by the Federal Reserve Banks. As a global company, we see the elements of best practices around the world. While masking account details is not viewed as essential, to mitigate legitimate concerns of fraud and risk exposure, an approach that is gaining ground in countries like Sweden, the U.K., and Canada is the use of mobile phone numbers and/or email address as a proxy that is linked to account details. Similarly, Australia also has plans to offer a "simple payments addressing" in the second phase of its New Payments Platform to allow customers to send payments using information

[2] Reserve Bank of Australia. "Strategic Review of Innovation in the Payments System: Conclusions." June 2012. Available at < http://www.rba.gov.au/publications/consultations/201206-strategic-review-innovation-conclusions.html >.

other than the destination account number.[3] Of note, CGI views the proxy/masking service should sit on top of the underlying infrastructure rather than being built into it.

5. In general, cross-border payments from and to the United States are slow, inconvenient, costly, and lack transparency regarding fees and timing.

While it is true that there is considerable complexity in cross border payment processing the predicted growth through areas such as worker's remittances means that this is a revenue source that cannot be ignored. Currently the inefficiency associated with this payment type arises from the complexity of the differing rules and regulations between the originating and receiving countries which has tended to result in cross-border payments being treated as exception items with a high-degree of manual intervention (and hence cost). We are observing growth in the use of Global ACH solution providers in place of the traditional approach of extensive correspondent networks or use of a Global bank; these solutions are also able to offer significant coverage of the challenges arising from Dodd Frank 1073.

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. 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.

CGI agrees that mainstream adoption of mobile devices and advances in smart phone capabilities has the potential to transform payments and commerce in the U.S. Combined with the ability of the mobile device to be independent of the payment channel, this has the potential to have a dramatic impact on electronic payments growth. Mobile devices present additional opportunities and new risks that include:

- Enhanced customer credentials based on geo-location, multi-factor authentication, and biometrics;
- Value added services that may be built leveraging mobile data analytics;
- Fraud and risk mitigation with the migration to EMV;
- Emergence of new entrants in the person-to-person (P2P) space capable of initiation from mobile phones;
- Increased fragmentation in the market with stakeholders pursuing QR codes and/or NFC enabled transactions;
- Further disruptors by new entrants as PayPal was in the online space and Square in the mPOS arena;

[3] Australian Payments Clearing Association. *Real-Time Payments*. December 2013. < http://www.apca.com.au/about-payments/future-of-payments/real-time-payments>.

- The downside is also new fraud scenarios, added anti-money laundering compliance, and heightened risk of identity theft.

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.

This is a challenge for large enterprises as well as mid and small-sized businesses that lack resources to automate payment reconciliation and thus achieve straight-through processing. In the case of large companies, payment and accounting systems are connected to, and interface with, a multitude of other core applications such as AP and payroll, which exacerbate the challenges with automation of payments processing and improving efficiency. In looking to the global experience, some regional schemes in the Nordic Payments Area are seeking to utilize the flexibility of ISO 20022 message standards to enable extended remittance data to be added into the payment message to improve corporate payables and receivables processes. Notably NACHA now also has an opt-in ISO 20022-based data dictionary for extended remittance information that has the potential to drive efficiencies and facilitate greater information exchange between businesses of all sizes.[4]

8. Consumer fears about payment security sometimes inhibit adoption of electronic payments.

Indeed, data breaches and exposures sensationalized in the press heighten consumer fears of privacy and identity theft. However, it is one of a myriad of contributing factors that inhibit adoption of electronic payments by a certain sector of the population.

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

Additional areas for consideration include:

- The ability to include minimum remittance information via all electronic payment channels;
- As with checks, possibly explore cash replacement.

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

In general, CGI supports the five desired outcomes outlined by the Federal Reserve Banks. Related to these are our observations noted below:

1. A collaborative and coordinated effort between as many payment system stakeholders (financial institutions, corporate users, operators, etc.) is essential for this type of effort.

[4] NACHA launched its XML-ACH Opt-in program in August 2013. For more information visit, <https://www.nacha.org/XML-ACH-Remittance>.

2. Globally, with consumer retail payments, as previously mentioned, a mobile phone number and/or an email address have been developed or in development as a proxy linked to account numbers, which can serve as potential models for the U.S. market. In the case of corporate business-to-business payments, today there already exists a unique account identifier issued by financial institutions to allow organizations to receive electronic payments without divulging confidential banking information, The Clearing House' Universal Payment Identification Code or UPIC. The UPIC used for credit payments to lower the possibility of unauthorized debits, checks and demand drafts is a tool that is an effective ways to minimize risk and facilitate safe, secure B2B electronic payments.
3. While reduction of societal costs of payment transactions with greater electronification and process improvements are desirable, this is also difficult to measure.
4. That consumers and businesses will have better choices in making convenient, cost-effective, and timely cross-border payments from and to the U.S. may be far reaching as evidenced in the challenges of implementing Regulation E of the Dodd-Frank Act Section 1073. Specifically, the requirement to disclose the transactions fees imposed along the value chain once initiated from the originating bank to the receiving bank was eventually deemed too onerous. The requirement was modified to make and in lieu, provide a disclaimer that the recipient may receive less than the disclosed total. As this experience reveals, there is little control with transactions that may be happening outside of the U.S.
5. The desire of the Federal Reserve Banks to collaborate with the industry to promote the security of the payment system from end-to-end is admirable, but may prove to be too broad a scope.

i. What other outcomes should be pursued?

With over 14,000 financial institutions and payment service providers in the U.S., there is a level of complexity and interdependency that is relatively unique. This complexity often leads to a lack of transparency which makes it difficult for regulators to understand the complete risk profile of an organization, and also poses a challenge for smaller institutions to "comparison shop" between providers. A potential additional outcome would be to achieve a flexible and transparent model across payment providers whereby costs and connectivity options can be easily understood and compared.

Beyond the above, today many U.S. businesses continue to rely on manual, paper intensive processes to reconcile payment with remittance data. The ability to include a standard minimum remittance information with electronic payments in relation to the purpose to reconcile payments should be a consideration as well.

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

An area that the Federal Reserve Banks can contribute as an independent body is to promote a policy of openness and transparency to foster innovation, providing third-party access to core clearings beyond existing market players. Related to governance, the Federal Reserve Banks must continue to the represent the public good.

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?

CGI believes that it will require coordinated action by a public authority or industry group to implement a system for near real-time payments. As history reveals, the opt-in nature of the same day FedACH, along with the limitation of ACH categories, proved to be a hindrance with only small and medium-sized banks using it. Along with this, the eventual failure of Expedited Processing and Settlement (EPS) by NACHA was telling. Whether the result of timing (as other regulations dominated banks' time), or an indicator of the strength of a few large players that have set up bilateral exchanges, the lack of a mandate suggests that this will be a very slow, arduous growth for the U.S. market, if not a costly one. Direct exchanges between individual banks is likely to increase, especially as banks that have significant amount of ACH transactions with each other continue to set up private connections to more quickly and inexpensively settle payments in order to innovate and meet customer demands. Coupled with the potential for a few players, including nonbanks, emerging with services in the marketplace will drive down competition in the market.

ii. What other perspective(s) should be considered?

In view of the global experiences where public authorities intervened for the greater good should also be taken into consideration (see Q1.2).

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.

The near real-time characteristics proposed by the Federal Reserve Banks are sound.

ii. What other characteristics or features are important for a U.S. near-real-time system?

Other features of near real-time system for consideration, though subject to further evaluation are:

- Irrevocability of payments, another common characteristic of faster payments around the globe;
- Available for customers to make payments 24 hours each day
- Able to transfer sufficient, guaranteed and standardized structured remittance information

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?

Based on CGI's experience working on the Faster Payments Services with the U.K. Payments Council, as well as at individual banks, and the findings from that effort, which are being utilized for global implementations, similar guidelines and lessons learned should be incorporated in the roadmap for the faster payments initiative in the U.S. A key aspect was the opportunity to create synergies, promote re-use, reduce cost and improve the environment for innovation afforded by the introduction of a new infrastructure, which was not fully exploited in the U.K. by the FPS initiative.

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?

It is CGI's view that considerable investment will be required by the payments industry in the pursuit of a U.S. real-time system. The actual architecture requires in-depth thought and perspective, along with consideration for the fact that the elected option can impose significant financial burden on the payment system participants also leading to increased costs for end users.

Based on CGI's experience, the following options pose challenges. The wire rails are not well suited to the modern world and will hinder the development of new instruments. Along with this, the wire system is an expensive channel, so to expand its capabilities while possibly lucrative for banks, would not be a realistic payment vehicle for consumers and businesses. An alternative option is to leverage existing closed communities. However, it should be noted that businesses will likely protect their competitive advantage, and given the different agendas of institutions, the linking of existing limited participation networks may not be likely. On the other hand, exploring a fee structure that will incentivize incumbent providers to support and participate should still be explored. This would reduce costs and risks significantly. Another option that may not be pragmatic is implementing an entirely new payment system. U.S. consumer and business behavior alike have time and again demonstrated that they continue to utilize payment options that still "work." Adoption will be a significant challenge. More importantly, the economics may not be justifiable. This approach would be the most expensive of options with costs potentially running into the billions of dollars to set up an entirely new infrastructure including clearing and settlement times to enable an open and flexible architecture among financial institutions, operators, solution providers and corporations. The ideal scenario is finding the appropriate balance between leveraging a combination of existing infrastructure, which should keep implementation costs lower, and building out new capabilities. It should be noted it will be essential to conduct a comprehensive assessment of the real impact and costs attached with re-use options to

ensure that any consequential effect on existing services is fully understood to minimize the risks, impacts, and restrictions of legacy systems.

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?

Given that even paper check deposits are cleared within 3 business days, it would defeat the purpose of introducing a near-real time payment vehicle if its features are not an improvement from existing payment instruments. Global real-time initiatives live today in the U.K., Mexico, South Africa and in progress in Australia, Sweden, Singapore, among others are examples that offer payments initiation outside of normal business hours with close to immediate funds availability.

iv. Which payment scenarios are most and least suitable for near real-time payments? (B2B, P2P, P2B, POS, etc.)

Multiple domains should be pursued, person-to-person (P2P), business-to-business (B2B), person-to-business (P2B) such as in bill payment, remote purchases, and POS purchase transactions. However, it may make sense to begin by focusing on one type, such as P2P, and expanding to others where common payment applications and the lessons learned may be shared. P2B transactions are another consideration as a starting point. Particularly in the case of small businesses, it can drive growth and stimulate the Gross Domestic Product (GDP). In the U.K. experience, businesses have benefitted from enhanced visibility of funds, along with better cash management associated with reduced late payments.

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?

Arguably checks are the vehicle most susceptible to payments fraud and risk as noted in various payments fraud studies.[5] To that end, the continued or persistent use of such a payment type makes little sense. Focusing on near real-time payments will ultimately be more beneficial to the payment system.

[5] AFP. "2013 AFP Payments Fraud and Control Survey." March 2013. <http://www.afponline.org/fraud/> and Federal Reserve Bank of Minneapolis. "2012 Payments Fraud Survey Summary of Results." 17 September 2012. <http://www.minneapolisfed.org/about/whatwedo/payments/2012_Payments_Fraud_Survey_Summary.pdf>.

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

The acceleration of payments will be important in mitigating against fraud and risk by reducing exposure. Given the system will be designed such that banks doing the credit push will also have the bank account of the user initiating payment, financial institutions will be able to determine more quickly if a customer has the funds available.

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

As with any new forms of payments, fraud risks will also evolve. However, the benefits outweigh any potential risks that may eventually emerge, which are not known at this time. The benefit of new payment instruments, however, is that security is one of the early considerations in the development process.

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

As consumers become accustomed to making purchases on their mobile device enabled by a near real-time system, payment transactions on this channel will increase rapidly.

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

Inaction by the Federal Reserve Banks may lead to adverse consequences. The industry will seek other options and payment channels for faster payments including new payment services offered by non-bank providers of payment services. Along with the potential for payments to leave the network (as in the case of ACH payments with direct exchanges), these alternative options are not as transparent and pose possible governance issues. Ultimately, this could drive down competitiveness in the marketplace, as the potential for a few market players may emerge to exercise monopoly power, possibly stifle innovation, and the relevant benefits for end users.

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

Not implementing faster payments in the U.S. will result in an opportunity loss to improve payment services and efficiency, reduced choices for customers and businesses, and a loss of participation in a growing sector of payments as they seek alternative channels. More importantly, with the global trend in shifting to real-time initiatives from Mexico, Switzerland, South Africa, U.K., Sweden, Korea, Australia, Spain, to Singapore, India, among others, the U.S. risks falling behind the rest of the world.

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

The industry will require moderate to large changes to its core processing engines and backend systems to support near-real-time payments. In part modernization will depend on the lifecycle of the existing infrastructure and the various touch points, which include clearing, accounting, notifications, and statements.

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

Consideration should also be given for industry timelines versus individual implementations. Industry timelines require a time frame for discussions, agreements, specifications, industry testing, and so on. Realistically this phase will take multiple years. The individual implementations as in the banks (i.e., from the start of the implementation project (excluding any preparation phase, RFI/RFPs etc.) should require one to two years, though the timeframe will also be highly dependent on the size and as such complexity of the stakeholder.

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?

For businesses, available today from certain financial institutions is the UPIC or universal payment identification code that offers an additional level of fraud security in making business-to-business payments. The UPIC is a banking address used to receive electronic credit payments. It is a unique number that is assigned to a company's bank account number to mask sensitive banking information. A UPIC functions like a standard bank account number, and travels through the ACH network with the Universal Routing and Transit (URT) number. For the business customer, no system changes are needed to accounts payable, accounts receivable or cash management systems to use a UPIC. An added advantage of the UPIC is its portability. A UPIC becomes an organization's permanent electronic payment address. Customer's business partners who originate ACH payments do not see or have access to the actual banking information, which helps prevent unauthorized payments from occurring. However, the downside of the UPIC is that it is a proprietary product offered by the Electronic Payments Network (EPN, a business unit of the Clearing House), and can only be obtained through a participating bank. It would be of value to the payments system to expand this service and made available to all business customers. Indeed, the concept of the unique bank account identifier and portability of bank account number is not unique to the US. Sweden and

other European countries offer similar services to corporate clients that the US can look to for lessons learned.

ii. What is the feasibility of this suggestion?

A centralized directory for B2B payments is feasible and already in progress (albeit nascent stage) as a priority project for the Remittance Coalition.[6] With such a large and fragmented market as the U.S., in the case of consumers, however, developing a centralized directory may not be realistic given the technical and operational challenges of creating, maintaining, and protecting such a large database.

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.)

Despite the decline in consumer checks, and more of the remaining ones are being imaged, paper checks are used by a small consumer group in the U.S., and continue to remain prevalent in business-to-business (B2B) transactions – a cohort that can claim a real need. As such, sensitivity to this demographic is important. As experience from the U.K. demonstrated, a small group highly resistant to change prompted the U.K. in 2011 to reverse the Payment Council's December 2009 roadmap to eliminate all checks by October 31, 2018.[7]

Beyond the barriers to electronic payments previously discussed (e.g., reconciliation of remittance information), U.S. check laws provide a protection for companies, which don't necessarily apply to electronic payments. An agreement or legislative or regulatory change is required to carry such features (e.g., irrevocability/ finality) in electronic payments like ACH transactions and alternative payments that leverage such electronic vehicles. However, revising statutes would be a considerable hurdle. These complex and myriad of issues along with their ramifications must be considered in further acceleration of the current trend in paper check decline.

[6] The Remittance Coalition is a group of organizations and individuals working together to promote greater use of electronic business-to-business (B2B) payments and electronic remittance data exchanges. For more information visit <http://www.minneapolisfed.org/about/whatwedo/remittancecoalition.cfm>.

[7] BBC. "Cheques not to be scrapped after all, banks say," 12 July 2011. <http://www.bbc.co.uk/news/business-14122129>

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?

Although CGI views migrating away from checks more aggressively for certain demographics to be disruptive, we recommend that the Federal Reserve Banks set strategic objectives for noncash payments by specified dates, and measuring the progress against these targets. Inevitably, if the new instruments deliver value to all stakeholders (e.g., payee, payer and banks) then migration will be a natural outcome.

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?

The efforts to migrate B2B payments from a paper-based instrument to electronic payment options have largely been limited to date. Part of this may be due to the patchwork of educational efforts by different organizations such as NACHA, the Association for Financial Professionals (AFP), regional associations, and other like trade member associations, as well as the clearing houses. A broad-based cohesive industry effort is needed. Indeed, the efforts of the Remittance Coalition formed in 2011 – comprised of a group of representatives from the above organizations and industry stakeholders working together to promote greater use of business-to-business payments and electronic remittance data exchanges – is a move in the right direction. However, this type of multi-stakeholder approach should be further advanced to promote more coordination and collaboration.

With respect to consumer payments, although the decline in check usage is much more precipitous, similar system-wide coordination and dialogue between the retail sector (e.g., National Retail Federation, business representatives) and NACHA, AFP, the Federal Reserve, and other stakeholders are key to shifting to electronic alternatives.

ii. What other barriers need to be addressed to accelerate migration of these payments?

In U.S. B2B payments a key issue with difficulty in transmission of remittance data with electronic payments is the lack of interoperability between electronic payments and accounting systems. Related to this, is the inability of trading partners to exchange automated remittance information with electronic payments. The absence of a structured format for remittance information is a contributing factor.[8] Globally the rich message format ISO 20022 is emerging to provide a framework to enable integration between a modern banking product and a company's payment system. While there is no ISO 20022 remittance standard in place today – following the Federal Reserve and the Clearing House' efforts to provide extended remittance information with wire transactions –NACHA has taken a lead to offer a standard with its opt-in XML-based ISO 20022 program. Indeed, the Federal Reserve Banks acknowledge the tepid adoption of the Fedwire ERI and CHIPS ERI is due to the support of multiple standards and formats, which defeats the aim of a uniform standard and ubiquitous usage and implementation. Along with harmonization with Fedwire ERI and CHIPS ERI ISO 20022 formats,[9] NACHA's data dictionary developed by CGI, aimed to be a comprehensive standard, which mapped/observed ISO 20022 pain message specifications, the IFX and OAGI ISO 20022 proposal submitted to the official ISO body, and NACHA banking conventions.

iii. What other tactics, including incentives, will effectively persuade businesses and consumers to migrate to electronic payments?

Although data available from the most recent triennial Federal Reserve Payments Study indicate that check usage continues to decline,[10] paper checks are unlikely to be abandoned among a minority of users without significant intervention. For businesses, this is a significantly more complicated issue (see prior comments including above Q14ii, Q13 and Q1).

In the case of consumers, to ensure that they feel comfortable turning to electronic payments, such as card payments or online banking, there needs to be a targeted, comprehensive system of consumer education. This should be coupled with incentives, which may offer a combination of "carrot and stick" approach such as an additional fee associated with check use, limitation of checks that can be written by banks, or possibly elimination of check acceptance entirely as some retailers have done (e.g., Whole

[8] AFP. "2013 AFP Electronic Payments Survey." November 2013. < http://www.afponline.org/epayments/> and Federal Reserve Banks of Minneapolis a& Chicago. " Electronic Payments and Remittance Data: Pain Points and Solutions." December 2012. < http://www.minneapolisfed.org/about/whatwedo/remittancecoalition/12-2012-Remittance-Coalition-Corporate-Survey-Final-Report.pdf>.

[9] The desire for harmonization of payments was a finding during CGI interviews with banks and solution providers in the Fall of 2012. Similarly, *Aite Group's survey of 240 receivables or payables experts at U.S.-based companies between January and March 2012*overwhelmingly found that U.S.-based companies' receivables respondents would like wire transfer and ACH remittance data to be in the same format.

[10] Federal Reserve System. "2010 Federal Reserve Payments Study." 5 April 2011. <http://www.frbservices.org/files/communications/pdf/research/2010_payments_study.pdf>.

Foods). Conversely, institute rewards for using a credit or debit card, educate consumers on spend management capabilities with electronic payments, and promote the use of online banking with educational efforts like assisting in account set-up.

iv. Which industry bodies should be responsible for developing and/or implementing these tactics?

The Remittance Coalition was formed to address the issues that impede businesses from the use of electronic payments and remittance data. CGI is an active contributor to the efforts of the Remittance Coalition. However, the Remittance Coalition also needs to become a more active voice for developing and/or implementing these tactics.

In the case of consumer payments, a similar body of organization is needed – whether an extension of the Remittance Coalition or the formation of new group spearhead by the Federal Reserve System, or similar independent body, dedicated to this effort – as checks for the minority of the population are unlikely to decline without significant intervention.

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?

In CGI's experience, we are seeing ISO 20022 formats emerging as a standard with broad international commitment beyond European countries with a SEPA mandate. Interestingly we've also found that the standard has served as a driver in some bank transformation programs globally. The value of standardization from the implementation of XML-based ISO 20022 payment messages include interoperability of cross-border payments between countries, along with compatibility with bank solutions, and increased data content, which offers the true benefit of straight-through processing to reduce costs and improve cash forecasting – two areas of high importance for businesses.

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?

Today, the most widely used payment vehicle for most cross-border transactions is the more expensive wire transfers. With U.S.-based organizations, contractual requirements typically dictate the payment method utilized in international payments. Similarly, consumers lack payment options with cross-border transactions. However, the use of a unified global payment format like ISO 20022 payment messages and its use in multiple channels may potentially offer greater and cost-effective choice to both consumers and businesses alike. Of note and a word

of caution, given its richness and personalization capabilities, there is the potential for too many flavors of ISO 20022 to emerge if there is no consensus on standardization.

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?

With the evolving technological landscape, and the use of mobile and cloud technology, the nature and method of attacks are also changing. One of the most vulnerable areas is through endpoint devices (e.g., laptops, tablets, and mobile phones) and the software running on these, which are often not updated and maintained. Sophisticated cyber attacks that include advanced threats and targeted malware can exploit these weak endpoints to compromise servers or domain controllers allowing fraudsters to masquerade as privileged users to ultimately attack high value assets (e.g., conduct large value wire transfers from business accounts).

An additional concern that is often overlooked is human behavior and the awareness of security principles and threats. Approximately a third (35%) of the global data breaches today are caused by negligent employees.[11] For example, data leakages often result from employees losing sensitive data on a laptop to innocent responders to spear phishing attacks from official looking emails or other communication. As such, more measures are needed to focus on educating users.

Another emerging threat is cross-channel fraud – when fraudulent or illegal payment transactions move from one retail payments channel to another. As an example, a forged paper check can be truncated and converted to an ACH item. Innovations like the recent trend in mobile remote capture offer consumers more options and flexibility, but they also increase payments fraud risk.

ii. Which of these threats are not adequately being addressed?

Keeping pace with rapidly changing cyber risks is a key challenge. Many don't realize they've been attacked taking months and even years to discover.[12] The security of the

[11] Ponemon Institute. "2013 Cost of Data Breach Study: Global Analysis." May 2013. <https://www4.symantec.com/mktginfo/whitepaper/053013_GL_NA_WP_Ponemon-2013-Cost-of-a-Data-Breach-Report_daiNA_cta72382.pdf>.

[12] Verizon. "2013 Data Breach Investigations Report." April 2013. <http://www.verizonenterprise.com/DBIR/2013/>.

end devices (especially mobile phones, computers and to a degree even POS terminals) is not enforced. In some cases it is not possible to enforce such security. Recent notable attacks reveal that sophisticated fraudsters are circumventing secure banks by targeting weaker links in the information supply chain (e.g., card processors). Also, as previously noted, human behavior is also a leading gap in cybersecurity. Careless use of public WI-Fi connections is an example of a vulnerability that can occur. In both cases, educational activities to increase people's awareness and understanding of threats and the security measures they can take would be beneficial.

iii. What operational or technology changes could be implemented to further mitigate cyber threats?

As the nature and severity of cyber threats increase, organizations need to monitor the threat landscape and have the ability to act on the information. Accordingly, a key element of risk mitigation within the links in the banking ecosystem (e.g., third-party providers) should be to implement analytics of data assets to detect trends and create key performance indicators for risk to proactively counter cyber threats.

Mitigation of cyber threats also requires implementation of effective company policies and procedures including limited administrative rights, segregation of duties, better employee training and education, and improved customer awareness.

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?

Although less known to businesses, today, many banks collaborate with each other through organizations like the Financial Services Information Sharing and Analysis Center (FS-ISAC), which enable its members to share information and receive early warning alerts and expert advice on cybersecurity. Expansion, coordination between organizations, and education of this type of effort would be valuable for the industry.

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

New innovations in technology are emerging via the mobile carrier combined with account, identity and transaction data that go beyond the traditional methods of authentication e.g., passwords and knowledge-based questions, which are promising for improved security and fraud mitigation.

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

While advances in technology are providing new customer services opportunities, they also expose banks and those in the end-to-end transaction process to more complex methods of attack. As an example, the introduction of mobile banking offer convenience, however, mobile threats such as mobile malware and spim are among the fastest growing forms of cyberattack.[13] When combined with the increased adoption of cloud computing, the risks increase. Although banks have to embrace these rapidly growing technologies, they also have to balance issues of security and privacy. Related to this is the "human factor" – the users who fail to update patches for software, or those who fall prey to social engineering. As such, general level of security awareness and education of users is key.

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?

A number of collaborative actions to consider include:

- Expansion and collaboration with existing entity/entities with a priority on payments security such as BITS[14] of the Financial Service Roundtable to conduct ongoing dialogue and education and awareness in the industry to advance the security of the payment system across the financial value chain;
- Related to these efforts, educational activities for the broader public;
- A coordinated database of threats and issues, along with a knowledge base of best practices and containment procedures would also be of value.

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

Ultimately CGI encourages the Federal Reserve to adopt a flexible approach on U.S. payments system improvements pursued through enhanced competition, and voluntary cooperation and collaboration by industry. Additionally, the Federal Reserve may consider forming a Payments Council similar to the efforts in Australia and the U.K. to consult with the industry to ensure governance of the U.S. payments sector.

[13] Symantec. "2013 Internet Security Threat Report." April 2013. <http://www.symantec.com/content/en/us/enterprise/other_resources/b-istr_main_report_v18_2012_21291018.en-us.pdf>.

[14] BITS is a nonprofit industry consortium comprised of the CEOs of 100 of the largest financial institutions in the U.S. that address newly emerging threats and opportunities. More information is available at < http://www.bits.org/index.php>.