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- Use the chat feature in the webinar (Ask Question button on bottom of screen)
Agenda

ISO 20022 as a strategy in the Federal Reserve’s Strategies for Improving the U.S. Payment System

ISO 20022 overview & example

U.S. path to consider the business case for adoption of ISO 20022

U.S. business case assessment

• Scope & approach
• Key observations
• Potential benefits & costs
• Impact of not adopting
• Conclusion & strategic reasons to consider ISO 20022 adoption in the U.S.

ISO 20022 use cases for wire systems

Next steps
Strategy 4: End-to-End Payment Efficiency
Achieve greater end-to-end efficiency for domestic and cross-border payments
Develop...

an Implementation Strategy for the application of the ISO 20022 standard to U.S. payment transactions

Planning & Education
Promote ISO 20022 educational efforts and develop a national strategy for ISO 20022 adoption

Cross-Border Payments
Enable ISO 20022 for cross-border wire payments, followed by cross-border ACH payments

Domestic Payments
Assess value proposition and timing for adoption of ISO 20022 for domestic wire and ACH payments

Additional Consideration
Consider ISO 20022 as the standard messaging format for new products and services
ISO 20022 Overview

What is ISO?

- International Organization for Standardization – a network of national standards bodies that develop international standards
- U.S. contributes through the American National Standards Institute (ANSI)

What is ISO 20022?

- A harmonized set of extensible Markup Language (XML) financial messaging standards across major financial services domains
  - Payments, Securities, Trade, Card and FX
- Based on a shared data dictionary & business process model (i.e., “common language”)
- Open standards made available to all members of the financial services community
- ISO 20022 messaging standards are created using a specific methodology.
- Foundation of SWIFT’s future standards development (SWIFT MX messages)
ISO 20022 Overview

What is the ISO 20022 for Payments?

- Robust standard with room for additional payment-related information that supports the end-to-end flow of information about a payment from the originator to the beneficiary
  - Payment initiation (corporate to bank)
  - Interbank settlement (bank to bank)
  - Cash management (bank to corporate)

- Standard being adopted by an increasing number of the world’s payments, clearing & settlement systems
  - Europe, Japan, Switzerland, India, Canada…and more
  - SWIFT’s ISO 20022 adoption mApp for iPad® devices, available from the App Store℠

- Growing interest from financial institutions, corporations and financial applications providers

- “ISO 20022 for Dummies” can be requested for free.
ISO 20022 Example

The Fedwire® Funds Service and CHIPS® proprietary message formats contains 3 free-text address lines for each of the various party fields in the message.

The ISO 20022 format uses XML syntax and contains discrete fields designed to contain specific address information.

<table>
<thead>
<tr>
<th>Fedwire Funds Service &amp; CHIPS proprietary formats</th>
<th>ISO 20022 format</th>
</tr>
</thead>
<tbody>
<tr>
<td>Address Line 1 (up to 35 characters)</td>
<td>Postal Address <code>&lt;PstlAdr&gt;</code></td>
</tr>
<tr>
<td>Address Line 2 (up to 35 characters)</td>
<td><code>&lt;AdrTp&gt;</code> (4 characters)</td>
</tr>
<tr>
<td>Address Line 3 (up to 35 characters)</td>
<td><code>&lt;Dept&gt;</code> (up to 70 characters)</td>
</tr>
<tr>
<td></td>
<td><code>&lt;SubDept&gt;</code> (up to 70 characters)</td>
</tr>
<tr>
<td></td>
<td><code>&lt;StrtNm&gt;</code> (up to 70 characters)</td>
</tr>
<tr>
<td></td>
<td><code>&lt;BldgNb&gt;</code> (up to 16 characters)</td>
</tr>
<tr>
<td></td>
<td><code>&lt;PstCd&gt;</code> (up to 16 characters)</td>
</tr>
<tr>
<td></td>
<td><code>&lt;TwnNm&gt;</code> (up to 35 characters)</td>
</tr>
<tr>
<td></td>
<td><code>&lt;CtrySubDvsn&gt;</code> (up to 35 characters)</td>
</tr>
<tr>
<td></td>
<td><code>&lt;Ctry&gt;</code> (2 characters)</td>
</tr>
</tbody>
</table>
ISO 20022 Business Case Assessment

Background

- Several major world-wide markets announced plans to adopt ISO 20022 in response to:
  - Regulatory mandates
  - Development of new systems
  - Technology upgrades

- Determine if the U.S. payments markets should also adopt ISO 20022 to remain competitive.

- ISO 20022 Stakeholder Group working to address U.S. adoption:
  - Engaged an independent consultant to objectively evaluate the business case for (or against) adopting ISO 20022 payment messages in the U.S.
  - Assessment considered both domestic & cross-border payments for Fedwire Funds Service, CHIPS, FedACH®, and EPN®

ISO 20022 Stakeholder Group

Federal Reserve Bank of New York
The Clearing House Payments Company, LLC
NACHA—The Electronic Payments Association
Accredited Standards Committee X9—Financial Industry Standards, Inc.
ISO 20022 Business Case Assessment
Scope and Approach

Global Scan

- Interviews with participants in other jurisdictions that have ISO 20022 adoption activities underway to assess
  - Drivers/rationale that led to adoption decisions
  - Implementation costs, strategies, timelines, challenges
  - Benefits of adoption, lessons learned

U.S. Industry Scan

- Web-based survey and phone interviews of U.S. PCS participants to assess understanding, perspectives & adoption status of ISO 20022

Negative Business Case

- Considered impact of not adopting ISO 20022 in the U.S.
ISO 20022 Business Case Assessment

Key observations – Global Scan

Adoption Efforts Underway

- Mature adopters—Europe
- Growing adopters—India, Japan, Singapore, South Africa, Switzerland
- Interested adopters—Australia, Canada, New Zealand, UK

Drivers for Adoption

- **In all cases**, adoption driven by one or more of the following
  - Regulatory mandate
  - Technology upgrades / system consolidations
  - New systems
- Other considerations:
  - Automation of previously manual processes, which enable operational efficiencies, cost savings and staffing reductions
  - Improvement in quality/quantity of data carried in messages (e.g., to meet regulatory requirements, remittance information)
ISO 20022 Business Case Assessment

Key observations – Global Scan

- Communication & education is critical.
- Establishing a unified national / regional target end date is key.
- Simply replacing current message formats with the ISO 20022 version of those messages ("like for like") will not drive full benefits of ISO 20022.
- Processes should be mapped end to end using ISO 20022 methodology.
- Adoption of ISO 20022 should include both payment & reporting messages.
- Adoption strategies should include translation & enrichment services for end users.
- Use of single message implementation guide among market participants will help reduce costs & risks.
ISO 20022 Business Case Assessment
Key observations – U.S. Industry Scan

Lessons Learned

- Inconsistent demand
- Lack of awareness/understanding
- Difficult to quantify costs and benefits
- Unclear interoperability value proposition
- Low adoption of extended remittance information (ERI) in the U.S., despite existing capabilities, raises questions among some organizations on how adoption will be different.
- Lack of industry/regulatory mandate will make it difficult for U.S. PCS participants to advance adoption efforts.
# ISO 20022 Business Case Assessment

## U.S. Industry Scan – Potential Benefits

<table>
<thead>
<tr>
<th>Potential Benefit</th>
<th>Market Infrastructures</th>
<th>Financial Institutions</th>
<th>Corporates</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ability to better support payments innovation and make changes more easily via the support of only one common payment format vs. multiple formats; eliminate cumbersome mapping</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Support new products &amp; services enabled by ISO 20022 messages (enhanced reporting, e-BAM, e-invoicing, real time payments, mobile)</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Ability to more easily provide rich data with payments</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>More efficient cross-border payment scheme</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Enable more fluent messaging about the status of payments</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Improve global readiness for regulatory changes</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Ability to provide consistent support for global clients</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Enhanced ERP systems</td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Ability to centralize treasury operations</td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Cost savings related to managing multiple banking relationships</td>
<td></td>
<td></td>
<td>X</td>
</tr>
</tbody>
</table>
ISO 20022 Business Case Assessment
U.S. Industry Scan – Potential Costs

- Costs to adopt ISO 20022 are difficult to quantify & will vary for participants in the following areas:
  - Technology
  - Implementation
  - Vendors
  - Training
ISO 20022 Business Case Assessment
Impact of not adopting in the U.S.

- Innovation could be hampered by not updating formats/systems at the same pace as other major markets around the world

- Loss of global interoperability with other major markets around the world could impact
  - Competitiveness of U.S. corporates engaged in global trade & their banks/supporting market infrastructures
  - Attractiveness of the USD as a global currency

- Increased cost & inefficiencies of maintaining multiple formats and legacy systems

- Could lead to negative global perception of U.S. as an outlier resistant to change
ISO 20022 Business Case Assessment

Conclusion

- Benefits are largely qualitative at this point and haven’t been fully realized

- Difficult to define an overarching financial business case at the industry level
  - In all cases, upgrade to ISO 20022 in other markets was part of broader technology project or regulatory mandate.
  - Other markets were reluctant to share proprietary information regarding local business cases.

- Momentum exists for ISO 20022 adoption among large global banks and large global corporates.

- While there may not be a compelling financial business case at this time for U.S. PCS participants to adopt ISO 20022, there may be strategic reasons to do so
## ISO 20022 Business Case Assessment
### Strategic Reasons to Consider ISO 20022 Adoption in the U.S. Market

<table>
<thead>
<tr>
<th>Strategic Reason</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Global Momentum</td>
<td>Large U.S. corporates and banks are actively adopting ISO 20022 and that is expected to continue.</td>
</tr>
<tr>
<td>Global Competition</td>
<td>Compatibility with the ISO 20022 format enables the United States to maintain parity with other global markets and U.S. dollar clearing systems in other jurisdictions that are adopting ISO 20022 messaging, which may help preserve the attractiveness of the U.S. dollar as a global currency.</td>
</tr>
<tr>
<td>Cost Savings &amp; Processing Efficiency</td>
<td>Standardizing message formats allows for consolidation of payments platforms at banks and corporations, which could promote straight-through processing and drive down costs.</td>
</tr>
</tbody>
</table>
## ISO 20022 Business Case Assessment

### Strategic Reasons to Consider ISO 20022 Adoption in the U.S. Market

<table>
<thead>
<tr>
<th>Strategic Reason</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Consistent &amp; Rich Data</td>
<td>While domestic formats support robust data content, ISO 20022 enables all parties to leverage a common set of data dictionary elements to build transactions and messages under an internationally agreed approach.</td>
</tr>
<tr>
<td>Interoperability</td>
<td>A common format promotes ease of transacting domestically and globally by using a single, open standard rather than multiple proprietary standards.</td>
</tr>
<tr>
<td>Agility to Meet Evolving Regulatory Needs</td>
<td>The ISO 20022 format provides for full originator and receiver information, allowing for improved regulatory reporting and monitoring.</td>
</tr>
<tr>
<td>New, Innovative Products</td>
<td>A common format across systems reduces the amount of change required to bring innovative new products and services to market.</td>
</tr>
</tbody>
</table>
ISO 20022 Business Case Assessment

Recommendations

- Employ a phased approach to ISO 20022 adoption to reduce risk and cost.
- To better educate and plan with the industry, the stakeholder group also agreed to conduct an assessment to identify specific use cases that could be addressed by ISO 20022 in the U.S.

<table>
<thead>
<tr>
<th>Phase</th>
<th>Recommendations</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 – Planning &amp; Education</td>
<td>Promote ISO 20022 educational efforts and develop a national strategy for ISO 20022 adoption</td>
</tr>
<tr>
<td>2 – Cross-Border Payments</td>
<td>Enable ISO 20022 for cross-border wire payments, followed by cross-border ACH payments</td>
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<tr>
<td>3 – Domestic Payments</td>
<td>Assess value proposition and timing for adoption of ISO 20022 for domestic wire and ACH payments</td>
</tr>
<tr>
<td>Additional Consideration</td>
<td>Use ISO 20022 as the standard messaging format for new products and services</td>
</tr>
</tbody>
</table>

- Consultant’s [ISO 20022 Business Case Executive Summary](#) is available on NACHA’s website.
  - Must establish user ID & password and agree to terms of use to download report.
Feedback on ISO 20022 Business Case Assessment

In September 2014, the Federal Reserve Bank of New York and The Clearing House begin discussions on ISO 20022 implementation strategies for the Fedwire Funds Service and CHIPS.

Key takeaways

- While there is consensus among the global banks around the intention to adopt ISO 20022 in the U.S., the means & timing have yet to be determined.

- Given lack of financial business case and regulatory mandate in U.S., use cases that articulate the benefits of ISO 20022 are critical.

- Need to engage others besides global banks in U.S. planning efforts.

- **Adoption of ISO 20022 in the U.S. should not separate cross-border and domestic payments.**

- Several implementation approaches were discussed at a high level, but more discussion needed to dive more deeply into pros, cons and timing.
# ISO 20022 Use Cases for U.S. Wire Transfer Systems

<table>
<thead>
<tr>
<th>Use Case</th>
<th>Limitations of Current Wire Formats</th>
<th>ISO 20022 Benefits</th>
</tr>
</thead>
</table>
| Compliance with domestic & global regulatory requirements | - Name limited to 35 characters, which can lead to either data truncation or carry-over data being mapped to other free-text fields.  
- Free-text address fields.  
- No discrete field for country code, which makes regulatory screening for sanctioned countries more difficult. | To comply with existing and evolving regulatory requirements, complete origination and beneficiary name and address information is critical. The ISO 20022 format has characteristics that make it easier to identify full name and address information in the payment message. Specifically, the ISO 20002 format:  
  - Includes consistent, user-friendly field names and has discrete fields to support specific data elements, several of which can be critical for proper regulatory screening (e.g., structured address fields, including a country code).  
  - Provides more capacity to allow for longer names (i.e., up to 140 characters) to reduce data loss, which is critical for proper regulatory screening and can improve straight-through processing.  
  - Provides banks that act as intermediaries with an effective way to identify missing information in cross-border wire transfers to enable them to take actions accordingly in a timely manner. |
# ISO 20022 Use Cases for U.S. Wire Transfer Systems

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</table>
| Domestic interoperability between U.S. wire systems and SWIFT | - The Fedwire® Funds Service and CHIPS® wire payment systems and SWIFT® messaging system have propriety message formats.  
  - While the formats are mostly interoperable, each format has its own unique field tag names & characteristics.  
  - Banks that participate in more than one system must maintain mapping routines to ensure that data is mapped correctly between systems.  
  - Whenever wire format changes are made, banks must update all systems or develop market conventions for mapping to or from systems that haven't changed. | Moving to a common ISO 20022 format for both wire systems in the U.S. that would be compatible with the ISO 20022 messages that could be carried on the SWIFT network could reduce or eliminate the:  
  - Gaps between different systems.  
  - Need for banks to maintain mapping routines to accommodate different formats.                                                                                                                                                  |
## ISO 20022 Use Cases for U.S. Wire Transfer Systems

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<th>Use Case</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Cross-border interoperability</td>
<td>As other markets outside the U.S. adopt ISO 20022 payment messages, banks and their corporate customers engaged in global trade will need to make system changes to accommodate the ISO 20022 upgrades in those markets.</td>
<td>Adoption of ISO 20022 in the U.S. could:</td>
</tr>
<tr>
<td></td>
<td>Lack of cross-border interoperability could lead to:</td>
<td>- Make it easier for global banks and corporates to conduct transactions across different markets.</td>
</tr>
<tr>
<td></td>
<td>- More cross-border payments migrating to offshore dollar clearing arrangements capable of conducting transactions in the ISO 20022 format.</td>
<td>- Reduce costs associated with having to maintain multiple formats to accommodate markets that have not yet adopted the ISO 20022 payment message format.</td>
</tr>
<tr>
<td></td>
<td>- Counterparties deciding to conduct transactions in other currencies in markets that have already migrated to ISO 20022.</td>
<td>- Prevent migration of U.S. dollar payments to offshore clearing arrangements or other currencies, which may help the U.S. dollar remain attractive as a global currency.</td>
</tr>
</tbody>
</table>
## ISO 20022 Use Cases for U.S. Wire Transfer Systems

<table>
<thead>
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</tr>
</thead>
</table>
| Single end-to-end payment file format | On the *payment origination* side:  
- Some corporations send commingled payment files (i.e., in EDI 820 or ISO 20022 format) to instruct their banks to make various payment types (e.g., wire, ACH, check).  
- The banks then need to convert these instructions to the appropriate format for the respective payment system, which today involves separate formats for wire, ACH, and checks.  
  
On the *payment receipt* side:  
- Banks need to be able to receive different formats from the market infrastructures.  
- Banks then need to convert those instructions to other formats (e.g., BAI format or proprietary format) to deliver payment information to beneficiaries. | The ISO 20022 format:  
- Has sufficient data fields to support a single, uniform format for both high-value, low-value, and emerging real-time retail systems.  
  
- Contains fields that are common across the suite of ISO 20022 payment messages so that the same information can be carried end to end through the payment chain as follows:  
  - Payment initiation (corporate to bank)  
  - Interbank settlement (bank to bank)  
  - Cash management (bank to corporate)  
  
- Could allow corporations, banks, and market infrastructures to exchange payments in the same format regardless of the type of system they are using to process the payment. |
## ISO 20022 Use Cases for U.S. Wire Transfer Systems

<table>
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<tr>
<th>Use Case</th>
<th>Limitations of Current Wire Formats</th>
<th>ISO 20022 Benefits</th>
</tr>
</thead>
</table>
| **Consistent format for extended remittance information (ERI)** | The U.S. does not have a uniform format for ERI:  
  - ACH systems use both legacy ERI formats (i.e., EDI, STP 820), as well as XML and ISO 20022 REMT 001 structured remittance.  
  - ERI for wire payments was introduced in November 2011, but adoption has been limited.  
  - Numerous ERI formats prevent uptake of ERI in a consistent way because banks, corporations, and their vendors need to make changes to support and maintain each format. | ISO 20022 provides a consistent format for ERI for all parties in the payment message, which could:  
  - Make end-to-end adoption easier.  
  - Increase the likelihood that when an originator sends ERI, the beneficiary can receive and process it.                        |
## ISO 20022 Use Cases for U.S. Wire Transfer Systems

<table>
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<tr>
<th>Use Case</th>
<th>Limitations of Current Wire Formats</th>
<th>ISO 20022 Benefits</th>
</tr>
</thead>
<tbody>
<tr>
<td>End-to-end payment tracking</td>
<td>Each party to a payment transaction has limited visibility into the end-to-end transaction flow to ensure the payment was successfully processed from the originator to the beneficiary.</td>
<td>The ISO 20022 payment and cash management messages:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Contain structured messages (e.g., status messages, return messages) to support real-time payment tracking and reporting.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Can enable banks to more easily provide their customers with information about the status of their payments.</td>
</tr>
</tbody>
</table>
# ISO 20022 Use Cases for U.S. Wire Transfer Systems

<table>
<thead>
<tr>
<th>Use Case</th>
<th>Limitations of Current Wire Formats</th>
<th>ISO 20022 Benefits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diminishing legacy resources</td>
<td>As seasoned format experts change jobs or retire, maintaining staff with expertise on legacy proprietary formats becomes more challenging and costly.</td>
<td>Upgrading to a modern, XML-based, common format for payment messages could expand the knowledge base of formatting experts in the payments industry.</td>
</tr>
</tbody>
</table>
Next Steps

- The ISO Stakeholder Group will proceed on the following workstreams:
  - **Wire:** Federal Reserve Banks (Wholesale Product Office), TCH (CHIPS) and X9
  - **ACH:** Federal Reserve Banks (Retail Payments Office), TCH (EPN), NACHA and X9

- Engage banks, vendors and SWIFT in discussions about the benefits of ISO 20022 and possible implementation options and timeline (May/June)

- Fed & TCH will host in-person meeting for members of respective advisory groups to develop high-level implementation strategy and timeline (July)

- The Stakeholder Group and SWIFT are contemplating a banker executive roundtable to build awareness and consensus on proposed high-level implementation strategy and timeline (September)

- The Stakeholder Group is targeting Sibos 2015 as a venue to announce high-level implementation plan and timeline for proposed strategy to implement ISO 20022 (October)
To get more involved....

The impact of ISO 20022 adoption will vary by institution and depend on the implementation strategy, which has not yet been determined.

In June, the Federal Reserve Banks will host additional webinars and an online survey to invite banks to share their views on potential implementation options and timelines for adoption of ISO 20022 for wire transfer systems in the U.S.

Information about the webinar sessions, including registration, and the online survey will be posted on FedPaymentsImprovement.org
Take Action…

Participation in the task forces and work groups
Diverse stakeholder participation will be essential to the success of these initiatives. Learn more at FedPaymentsImprovement.org

Participation in feedback forums and opportunities
We will continue to seek input and communicate progress on initiatives from all payment participants through live and virtual forums, surveys, industry- and Federal Reserve-sponsored groups and events, and online feedback mechanisms on FedPaymentsImprovement.org

Individual action in support of the desired outcomes
Delivering end-to-end improvements will demand action by all to align with best practices, implement standards, contribute to research and data collection, upgrade systems and more
Join the FedPayments Improvement Community!
Receive communications and invitations to live/virtual forums, surveys, industry-/Fed-sponsored groups and events, and online feedback mechanisms.

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FedPayments Improvement
FedPayments Improvement
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