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— November 7-10, 2010 | San Antonio —



The Case for Corporate Involvement in Developing Payment Standards

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November 8, 2010

Agenda

Who We Are

Overview of U.S. Payments Standards

Relationship to International Standards

Standards Initiatives Relevant to Corporations

Conclusions

Disclaimer: The views expressed in this presentation are those of the speakers and do not necessarily reflect the views of the organizations for which they work.

2

Who We Are



Driving positive change in payments acceptance through partnership

Merchant Advisory Group

- ❖ Cross-industry association of large merchants involved in payments industry. MAG seeks partnerships among merchants, acquirers, payment companies & banks to improve the payments process for everyone
- ❖ Members are large corporations that accept credit cards & other payment alternatives for the sale of goods & services
- ❖ Total payments value processed annually by MAG merchants is nearly a trillion dollars

MAG & Standards

- ❖ Member of X9 Board of Directors & participant in Subcommittee X9F
- ❖ Participant in PCI SSC
- ❖ Main reasons for participation in standards:
 - Ensure inclusion of merchant voice in standards development
 - Promote unified standards efforts
 - Promote use of standards with new technologies

Who We Are



Intel

- ❖ Designs & manufactures computing & communications components, such as microprocessors, chipsets, motherboards, and wireless & wired connectivity products, as well as platforms that incorporate these components.
- ❖ Founded in 1968 to build semiconductor memory products; introduced world's first microprocessor in 1971.
- ❖ Intel reported 2009 revenue of \$35.1 billion, operating income of \$5.7 billion, net income of \$4.4 billion, and earnings per share of 77 cents.

Intel & Standards

- ❖ Member of RosettaNet, ANSI X12
- ❖ Participant in SWIFT & ISO 20022
- ❖ Reasons for participation in standards:
 - Promote the adoption of new technologies
 - Promote cost effectiveness of new business processes
 - Facilitate STP of payments globally

Who We Are



General Electric

- ❖ GE is a diversified infrastructure, finance and media company, tracing its beginnings to Thomas A. Edison, who established Edison Electric Light Company in 1878. GE is the only company listed in the Dow Jones Industrial Index today that was also included in the original index in 1896.
- ❖ GE operates in more than 100 countries and employs about 300,000 people worldwide.
- ❖ In 2009, GE had earnings of \$11.2 billion; industrial cash flow from operating activities were over \$16.6 billion.

GE & Standards

- ❖ Member of X9 AB21 Cash Management Reporting Working Group
- ❖ Member and co-convener of CGI
- ❖ Main reasons for participation in standards:
 - Advocate for standardization in C2B cash management processes
 - Promote utilization of new technologies

Who We Are



Federal Reserve System

- ❖ Sets nation's monetary policy
- ❖ Supervises & regulates selected financial institutions (FIs) to ensure safe & sound banking practices
- ❖ Provides payments services to FIs, U.S. Treasury & other federal agencies
- ❖ Mission in payments *to foster the integrity, efficiency, & accessibility of U.S. dollar payments & settlement systems, issue a uniform currency, & act as the fiscal agent & depository for the U.S. government*

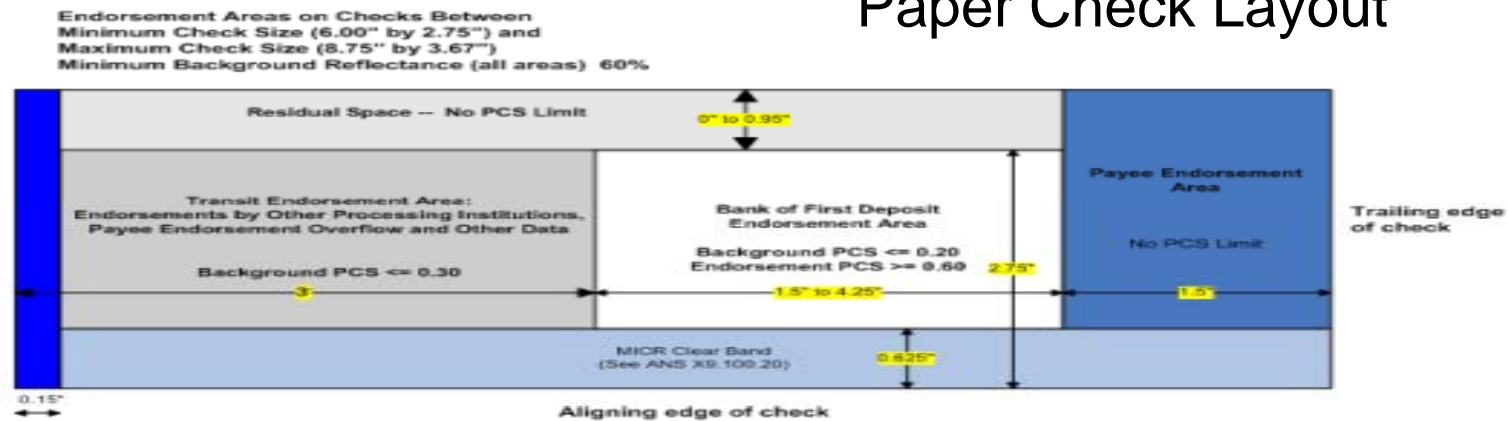
Fed & Payment Standards

- ❖ Participates &/or holds leadership positions in standards bodies—e.g., ASC X9, ASC X12, ISO TC68
- ❖ Defines format & use conventions for proprietary payments—e.g., Fedwire
- ❖ Uses industry standards in payments processing operations
 - As ACH operator, uses NACHA rules & formats, including X12 standards

What Are Payment Standards?

1. Physical specification of a payment transaction, file, or data—e.g., paper check layout, NACHA file format.

Paper Check Layout



NACHA File Format*

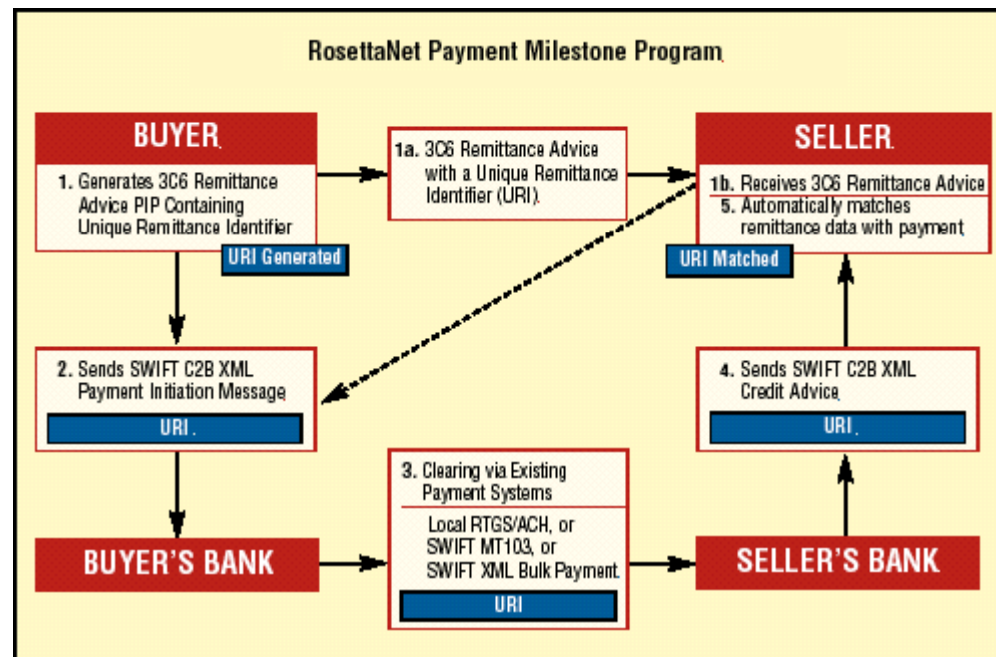
* U.S. ACH file format is defined by NACHA & not by a standards organization such as X9 or X12; it illustrates a "de facto" standard

Entry Detail Record											
Data Element Name	Record Type Code	Transaction Code	Receiving DFI Identification	Check Digit	DFI Account Number	Amount	Individual Identification Number	Individual Name	Discretionary Data	Addenda Record Indicator	Trace Number
Field Inclusion Requirement	M	M	M	M	R	M	O	R	O	M	M
Contents	'6'	Numeric	TTTTAAA	Numeric	Alphanumeric	\$\$\$\$\$\$cc	Alphanumeric	Alphanumeric	Alphanumeric	Numeric	Numeric
Length	1	2	8	1	17	10	15	22	2	1	15
Position	1-Jan	3-Feb	11-Apr	12-Dec	13-29	30-39	40-54	55-76	77-78	79-79	80-94

What Are Payment Standards?

2. Rules surrounding a payment process—e.g., the RosettaNet Payment Milestone Program

This standard describes the process for a buyer paying a seller and transmitting payment related remittance information, so that the seller can electronically reconcile the payment to the remittance data



What Are Payment Standards?

- Processes to calculate or develop transaction/ data elements—e.g., Committee on Uniform Security Identification Procedures (CUSIP) for Securities Identification (ANSI standard X9.6-2008)

This standard enables development of identification numbers for fixed income instruments—e.g.,

Issue number is assigned to a fixed income security, which consists of 2 alpha characters (AA, etc.), plus 1 alpha character followed by one digit (A2, etc.), or 1 digit followed by 1 alphabetic character (2A etc.), in that order.

A separate issue number is assigned to each rate and/or maturity for each issue of bonds—i.e., a serial bond having 40 different maturities is assigned 40 separate issue numbers.



What Are Payment Standards?

4. Practices for using standards—e.g., Retail Financial Services Compliance Guideline: PIN Security & Key Management (X9 Technical Report 39 & Technical Guide 3)

These guidelines describe best practices to prevent PIN entry observation—e.g., documented procedures should exist to ensure the PIN entry device (PED) is designed &/or installed so that the cardholder can prevent others from observing the PIN value as it is being entered. Some considerations include placement of security cameras in relation to PED & PED shielding.



U.S. Payment Standards Organizations

American National Standards Institute (ANSI) coordinates U.S. voluntary consensus standards system & ensures development process is:

- | | |
|---------------------|--|
| 1. Voluntary | Any interested party may participate
Adoption of a standard is voluntary |
| 2. Consensus-based | All comments & objections addressed
Appeal process is defined
Majority vote is required, not unanimity |
| 3. Open & Impartial | Process is transparent
Standards are available to all
No single group's interests dominates |



ANSI accredited organizations (ASC) that develop standards for U.S. financial services:

- ❖ **ASC X9** develops standards for U.S. financial services industry; owns over 120 technical standards & reports—e.g., Check 21 image exchange standards
- ❖ **ASC X12** develops electronic data interchange standards; owns over 300 technical standards & reports; 10 are payment related—e.g., EDI 820 for remittance data carried in ACH addenda record



Other Organizations Involved in Financial Service Standards

Industry consortiums, associations & service providers are also involved in financial service standards—e.g.: ECCHO, NACHA, FSTC/BITS, PCI, RosettaNet, SWIFT, TWIST

- ❖ Standards designed to address a specific business/industry need
- ❖ Development process may be relatively fast
- ❖ Adoption may be mandated or promoted highly among members

ANSI accredited standards development:

- ❖ Processes used are clearly defined & transparent
- ❖ Membership criteria fosters broad participation & “level playing field”
- ❖ Standards may be used by any party, but adoption is voluntary
- ❖ Standards developed are interoperable & seek to reduce need for multiple, proprietary & competing standards

International Organization for Standardization - ISO



- ❖ 163 national members, over 18,000 standards & 195 active technical committees involving over 50,000 experts
- ❖ Technical Committee # 68, TC68, covers financial services standard
- ❖ TC68 owns over 50 financial sector standards including codes, formats, business rules & risk management of electronic transactions, such as:
 - ISO 20022
 - PIN Management & Security
 - Biometrics
 - Information Security Guidelines
 - Public Key Infrastructure



X9 Organization

X9 Board of Directors (Consensus Body)

Technical Subcommittees



X9AB Payments

Paper check specifications
Formats & processes for check image exchange
Practices for combating check fraud
Standards for corporate account management based on BAI formats
Represents U.S. to ISO for payment standards



X9C Credit

Standards for financing & leasing of cards, homes, household goods, & credit card financing



X9D Securities

Standards for identifying fixed income instruments—e.g., CUSIP, ISIN
Represents U.S. to ISO for securities standards



X9F Data Security

Cryptography standards to protect financial data & authenticate users
Authentication standards for payment card users (e.g., PINS) & over the internet
Standards for evaluating & implementing new security technologies & protocols for financial services—e.g., penetration testing, biometrics
Represents U.S. to ISO for data security

ASC X12 Standards



Standards designed for electronic B2B communication in government, transportation, supply chain, insurance & finance

X12 Subcommittee F focuses on financial services related standards:

- ❖ Maintains Electronic Document Interchange (EDI) standards & technical guidelines for financial e-business transactions
- ❖ Developing XML versions of legacy EDI standards

Some X12F standards are approved for use in addenda of ACH transactions (PPD, CCD, & CTX):

- ❖ 813 – Electronic Filing of Tax Return Data
- ❖ 820 – Payment Order/Remittance Advice including simplified form, STP 820
- ❖ 823 – Lockbox
- ❖ 835 – Health Care Claim Payment/Advice

Some X12F standards are exchanged directly between buyers & suppliers:

- ❖ 810 – Electronic Invoice

International & U.S. Standards



International
Organization for
Standardization



Technical Committee 68 - TC68



X9 actively participates and seeks to align U.S. standards with ISO TC68 standards. X9 selects U.S. participants in ISO TC68 entities; U.S. delegates are TC68 and SC2 chairpersons. X9 serves as secretariat for TC68.

Subcommittee 2 – SC2 Security

X9F – Data Security

Subcommittee 4 – SC4 Securities

X9D - Securities

Subcommittee 7 – SC7 Core Banking

X9AB - Payments

ISO 20022

Technical Committee 154



Why Domestic & International Standards Matter



- ❖ Common adoption of standards enables trillions of dollars of goods/services to flow between organizations & across borders, despite differences among business parties
- ❖ Global nature of commerce & financial services industry make adoption of international standards increasingly important in areas including:
 - Payments processing, data security, invoice & remittance information, and so on
- ❖ The best standards are designed to:
 - Eliminate areas of redundancy/overlap & reduce operating costs
 - Facilitate interoperable technology
 - Represent the interests of multiple stakeholder communities

Standards Initiatives of Interest to Corporations

1. Security of Card Payments
2. Mobile Payments
3. ISO 20022 Adoption
4. BAI Bank Codes
5. Remittance Standards

1: Security of Card Payments

Magnetic Strip card



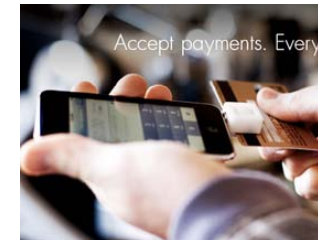
EMV card w/embedded chip

EMV (Chip & PIN) cards are used in Europe, Asia, Australia, Canada & Mexico

- ❖ Early adopter of EMV, UK, experienced 30% decrease in “point of sale” card fraud in first year
- ❖ U.S. is debating pros/cons of adoption:
 - Is there a business case, with implementation costs estimated at \$8.6 billion?
 - Will U.S. consumers & merchants demand interoperability with EMV standards?
 - Will more fraudsters migrate to US to exploit “less secure” magnetic strip technology?
 - Are there other/better options for strengthening card security—e.g., end-to-end encryption, tokenization, contactless card technology?

2: Mobile Payments

- ❖ 4.6 B mobile phone subscriptions worldwide
 - 172 M are “Smartphones”—i.e., mobile devices combining intelligence. Web access & telecommunications; growing by double digits in developed markets
- ❖ Payments may be made by texting a payment service provider, accessing a Web service provider (e.g., FI), or using contactless networking
- ❖ Payments may be received by attaching a card reader to mobile device
- ❖ Issues:
 - What type of security standards are needed with mobile payments?
 - What type of mobile payments technology will gain most adoption—SMS text messages? Contactless payments?
 - What type of business model will work for diverse players – banks, payments networks, telecomm companies?



3: ISO 20022 Adoption



- ❖ ISO 20022 is a standard methodology for developing financial transaction messages for securities, foreign exchange, payments, trade, & cards
- ❖ ISO 20022 repository has over 200 approved standard messages; 37 relate to payments—e.g., customer-to-bank, bank-to-bank, & bank-to-customer messages
- ❖ ISO 20022 adoption :
 - EU mandates use of some ISO 20022 payment messages in SEPA; other countries implementing ISO selectively (e.g., Japan, Brazil, China & Russia)
 - SWIFT supports ISO 20022 messages
 - International Payments Framework uses ISO 20022 to translate between country formats
 - Some US FIs & corporations beginning to adopt ISO 20022 message formats.
 - CGI initiative - To simplify implementation for corporate users and thereby to promote wider acceptance of ISO20022 as the common XML standard used between corporates and banks.
- ❖ How should US corporations respond?
 - How quickly should U.S. corporations adopt ISO 20022?
 - Will ISO 20022 messages be used for domestic and/or cross-border payments?

4: BAI Bank Codes

- ❖ Bank Administration Institute (BAI) developed codes & formats for exchange of account information between banks & corporations. Used over 20+ years, been modified by users
- ❖ In 2009, X9 initiated standards effort to:
 - Develop single code list, validate use of existing codes, eliminate codes not needed & add new codes needed
 - Establish standard for carrying remittance data, including new Fedwire/CHIPS remittance data
 - Harmonize BAI codes with SWIFT MT & ISO 20022
- ❖ AFP is partner in standardizing BAI reporting; member survey in June 2010 showed:
 - Corporates download BAI data from e-banking platform or Internet portal, or use file transfer & feed BAI data into back-office applications such as treasury workstations or ERP systems
 - Corporates use BAI reporting for information reporting, controlled disbursements/account reconciliation, lockbox/receivables, liquidity management, account analysis, cleared check review & EFT
 - Corporates strongly support BAI standardization; identified new areas where standard codes are needed

5: Remittance Standards

- ❖ Automating reconciliation of remittance information & electronic payment is key to achieving straight-through-processing (STP)
- ❖ 77% of respondents to 2007 AFP Payments Study cited lack of automated remittance information as barrier to more use of electronic payments; 74% reported no standard format for remittance information
- ❖ Many methods & standards exist for exchanging remittance data
 - Lockbox processing, online or Web-based application, 3rd party processor, ERP processes
 - Attached to or embedded in payment message (e.g., ACH + X12 820)
 - Exchanged over internet or virtual private network, e.g., RosettaNet, OAGi, X12, EDIFACT, TWIST, IFX, GS1, etc.
 - ISO 20022 XML remittance standard effort is beginning, sponsored by SWIFT, TWIST, IFX, and OAGi and based on UN/CEFACT EDIFACT standard
- ❖ Issues:
 - Which method for handling remittance will gain greatest adoption?
 - Which method is preferred for achieving STP?
 - What type of corporate involvement will ensure that remittance standards will meet corporate needs?

Why You Should Participate

- ❖ Important business issues are addressed by standards developers like X9 & X12 & ISO TC68
- ❖ Standards in use affect efficiency & effectiveness of payments & all participants in the payments process
- ❖ Business input is critical to developing standards that will work for corporate practitioners & be broadly adopted
- ❖ Participation in groups like X9, X12, & ISO TC68 ensures corporations have a voice in defining standards that will affect them & shape the financial services industry
- ❖ Global commerce makes U.S. & international standards more interdependent, which heightens the importance of participation by U.S. groups like X9 & X12 in ISO

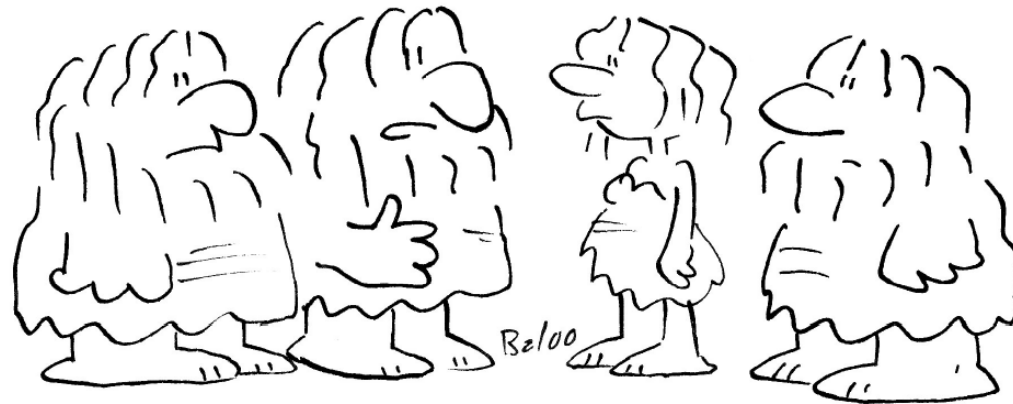


How Can You Participate?

- ❖ Review information available about ANSI accredited standards organizations; contact them for additional information
 - www.x9.org; www.x12.org
- ❖ Recognize relationship between business issues & “standards” development
 - Identify active standards projects your company would benefit from influencing
 - Identify & initiate new standards work
- ❖ Join & participate at various levels



Questions?



"NOW THAT WE'VE LEARNED TO TALK,
WE'D BETTER ESTABLISH SOME LOCAL
COMMUNITY STANDARDS."

For More Information

ANSI

www.ansi.org

X12

www.x12.org

X9

www.x9.org

ISO 20022

www.iso20022.org

SWIFT

www.swift.com

NACHA

www.nacha.org

FSTC/BITS

www.fstc.org

ECCHO

www.eccho.org

PCI SSC

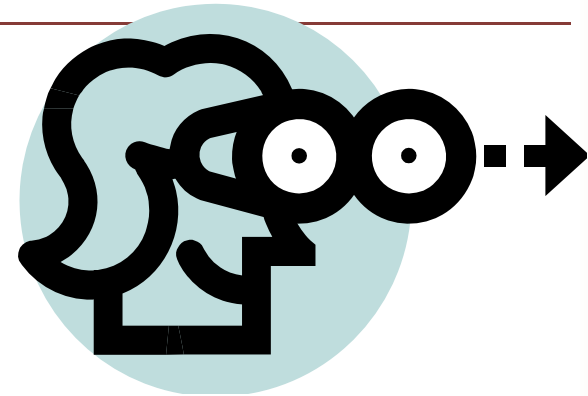
www.pcisecuritystandards.org

RosettaNet

www.rosettanet.org

SWIFT

www.swift.com



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Appendix

- 1. More on ANSI**
- 2. More on X9**
- 3. More on X12**
- 4. More on ISO 20022**
- 5. More on CGI**



More on ANSI



❖ American National Standards Institute (ANSI)

- ❖ Founded in 1918, ANSI is a 501(c)3 private, not-for-profit organization.
- ❖ The mission of ANSI is to enhance both the global competitiveness of U.S. business & the U.S. quality of life by promoting & facilitating voluntary consensus standards & conformity assessment systems.
- ❖ ANSI coordinates the U.S. voluntary consensus standards system, providing a neutral forum for the development of policies on standards issues & serving as a watchdog for standards development & conformity assessment programs & processes.
- ❖ Membership includes government agencies, organizations, companies, academic & international bodies, & individuals; ANSI represents the interests of more than 125,000 companies & 3.5 million professionals.
- ❖ ANSI does not develop standards, but accredits standards development organizations that meet ANSI's requirements for developing American National Standards. ANSI examines & assesses conformance to ANSI rules.
- ❖ ANSI is the official U.S. representative to the International Organization for Standardization (ISO)

More on ASC X9



- ❖ Formed in 1976 & accredited by ANSI in 1984
- ❖ Administration provided by a small professional staff
- ❖ Membership open to companies & organizations (not individuals)
- ❖ Organizational Structure:
 - ❖ Board of Directors (also called the “consensus body”) is comprised of a representative from each Category A member
 - ❖ Responsibilities are to ensure due process is followed, oversees committees & task groups, & approve standards
 - ❖ Chair & Vice Chair elected to 2 year terms
 - ❖ Standing Committees include Executive, Finance, Marketing & Membership, Policies & Procedures
 - ❖ Technical Subcommittees oversee the development of standards; workgroups within the subcommittees develop standards & addresses issues as needed
- ❖ X9 sells standards to non-members; members can obtain free
- ❖ X9 is the U.S. member to ISO TC68 work efforts

More on ASC X12



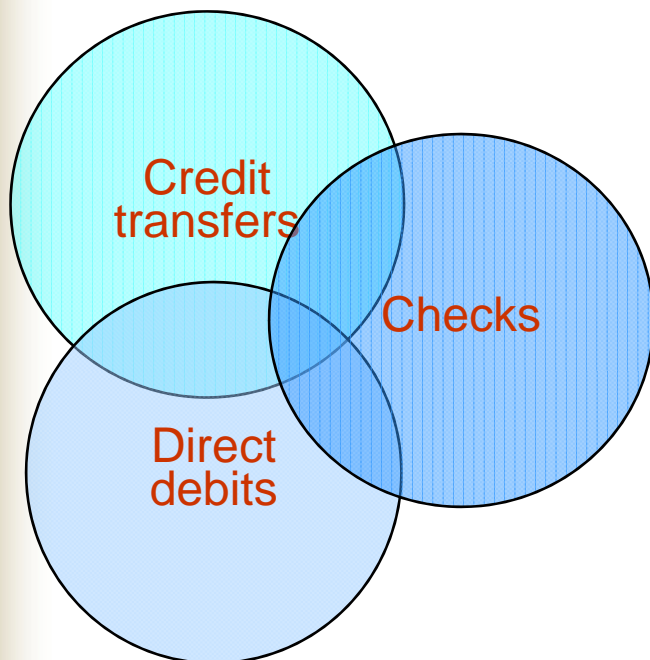
- ❖ Formed in 1975 & accredited by ANSI in 1979
- ❖ Administration provided by Data Interchange Standards Association (DISA)
- ❖ Membership open to individuals, companies, & organizations
- ❖ Organizational Structure:
 - ❖ Chair & Vice Chair elected to 2 year terms
 - ❖ Procedures Review Board ensures due process is followed & approves work for publication
 - ❖ Steering Committee oversees Task Groups: Collaboration & Outreach, Marketing, Business Development, Policies & Procedures, & Technical Advisory
 - ❖ Standards Subcommittees develop & maintain specific X12 transaction sets
 - X12C Communications & Control
 - X12I Transportation
 - X12M Supply Chain
 - X12F Finance
 - X12J Technical Assessment
 - X12N Insurance
- ❖ Work primarily occurs at trimester meetings (face-to-face & virtual)
- ❖ X12 packages all standards in annual release; discounts given to members

ISO 20022 – The Actors

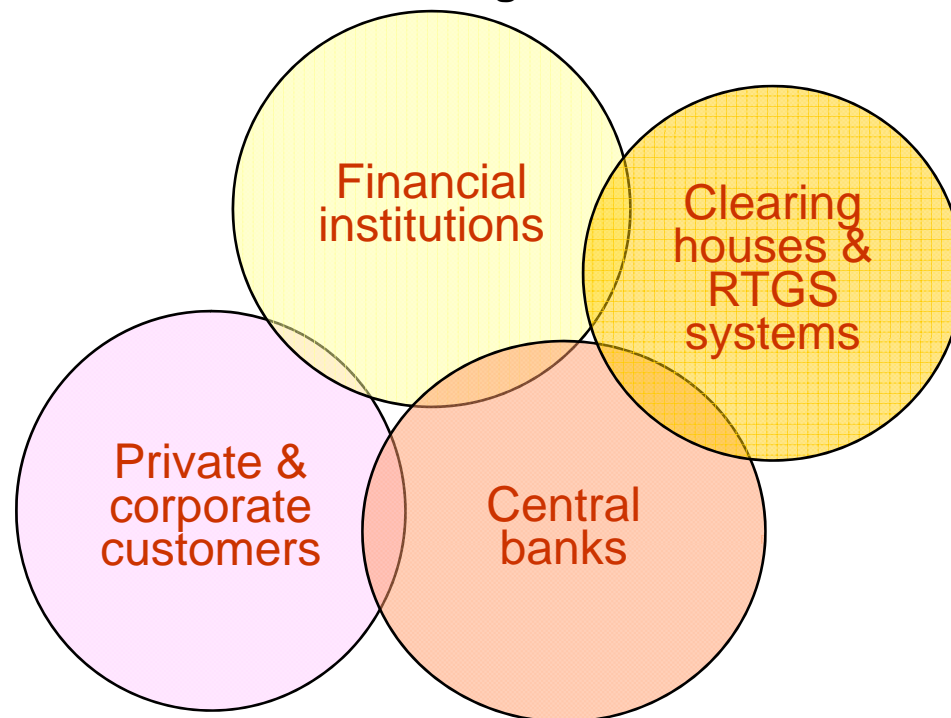
- ❖ Registration Management Group (RMG) - Overall governance & court of appeal, approves business justifications for new standards
 - ❖ 69 senior managers from 21 countries and 12 international organizations
 - ❖ Convener: Gerard Hartsink, ABN Amro (NL); Vice-convener: Bob Blair, JPMorgan Chase (US); Secretary: Cynthia Fuller, X9 (US)
- ❖ Standards Evaluation Groups, SEGs - represent future users in specific financial areas, validates candidate messages
 - ❖ Payments (55 experts, 17 countries, 6 organizations)
 - ❖ Securities (75 experts, 19 countries, 8 organizations)
 - ❖ Forex (32 experts, 14 countries, 4 organizations)
 - ❖ Trade Services (26 experts, 13 countries, 2 organizations)
 - ❖ Cards and related retail financial services (28 experts, 13 countries, 4 organizations)
- ❖ Registration Authority (RA) - maintains and publishes ISO 20022 Repository
 - ❖ ISO 20022 RA is SWIFT
- ❖ Technical Support Group (TSG) - assists RMG, SEGs, RA and submitting organizations

ISO 20022 – Payment Messages

Covering instruments such as:

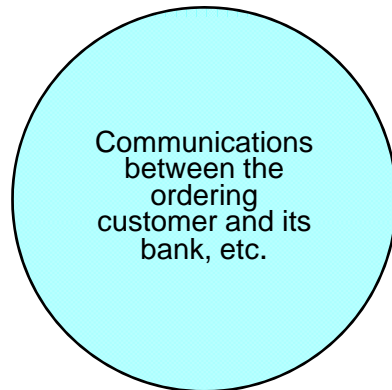


Covering actors such as:

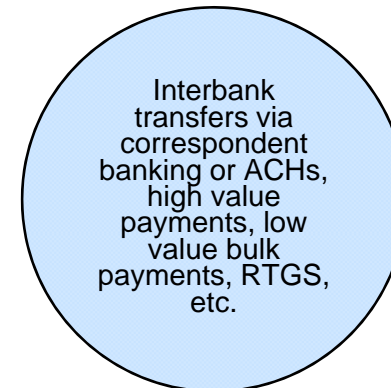


ISO 20022 – Payment Messages

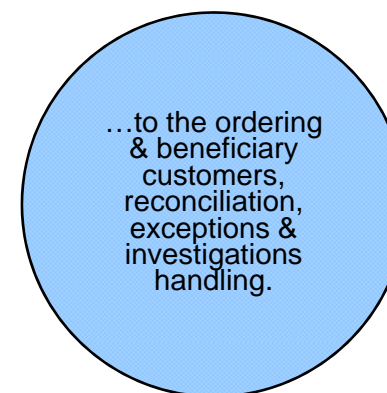
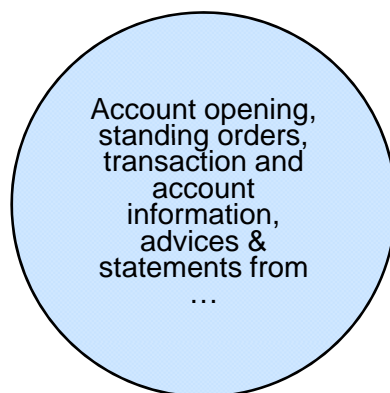
Payment initiation



Clearing & settlement



Cash Management between various actors:



ISO 20022 – Payment SEG

❖ 55 Members

- ❖ 17 countries: AT, AU, CH, DE, DK, FI, FR, GB, IT, JP, KR, NL, NO, RU, SE, US, ZA
- ❖ 6 liaison organizations: Euroclear, IFX, ISITC, SWIFT, TWIST, UN/CEFACT/TBG5

❖ Leadership

- ❖ Convenor: Thomas Egner, Commerzbank (DE); Vice-convenor: Bob Blair, JP Morgan Chase (US); Secretary: Deb Hjortland, FRB (US)

❖ Messages approved

- ❖ Corporate-to-Bank payment initiation
- ❖ Interbank credit transfers and direct debits
- ❖ Exceptions and investigations
- ❖ Bank-to-Corporate advice & statements
- ❖ Mandates
- ❖ Change/verify account identification

❖ Currently evaluating

- ❖ Cash account reporting request and notification

❖ Upcoming evaluations

- ❖ Cash withdrawal & lodgment

ISO 20022 Common Global Implementation Initiative

Objectives

- To provide a forum for financial institutions (banks and bank associations) and non-financial institutions (corporates, corporate associations, vendors and market infrastructures) to address corporate-to-bank ISO 20022 implementation issues and topics
- To simplify implementation for corporate users and thereby promoting wider acceptance of ISO20022 as the common XML standard used between corporates and banks.
- Develop ISO 20022 implementation templates for corporate-to-bank ISO 20022 financial

Drivers

- Driven by customer demand for multibank coordination of implementations
- Global corporate, multi-banked, multi-payment type, multi-country implementations (mixed payables)
- Is intended specifically for global, multi-country, multi-bank and multi-instrument implementations that the participating banks can commonly accept as ONE of their implementations
- Focuses on the general message structure and then successful creation of individual transactions that can be executed by the participating banks
- Can be published and has endorsement from appropriate communities
- Actively engages corporate partnership