

Fundamentals of Financial EDI



Federal Reserve System's Role Includes

- ✓ Supporting financial institutions
- ✓ Supporting increased use of electronic payment options
- ✓ Supporting federal government initiatives

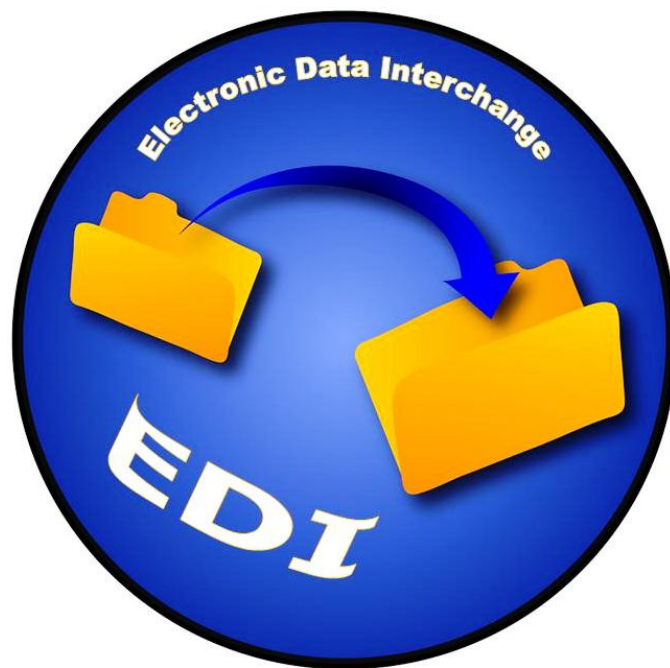




- Educate you about the basics of Electronic Data Interchange (EDI) and financial EDI (FEDI)
- Introduce the FedPayments[®] Reporter Service: The financial EDI parsing and reporting service provided by the Federal Reserve Banks



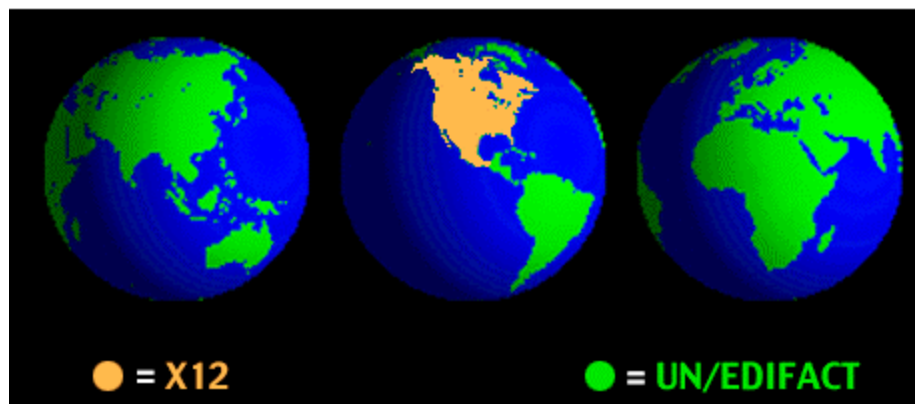
- What EDI is and how it works
- What financial EDI is and how it works
- How and why financial EDI impacts you and your corporate customers
- What receiving financial institutions need to do to assist corporate customers
- Introduction to the FedPayments Reporter Service



What is EDI? The electronic transfer of business information in a standardized, machine-readable format.

Machine-Readable, Standardized Formats Include

- Proprietary
- Industry Specific
- ANSI X12
- UN/EDIFACT





- Cross-industry standards
- Multi-function: purchase orders, shipping notice, invoice, payment



Who Uses EDI?

- Large to medium size companies and their trading partners
- Federal government
- State governments



The Goal of EDI



Benefits of EDI

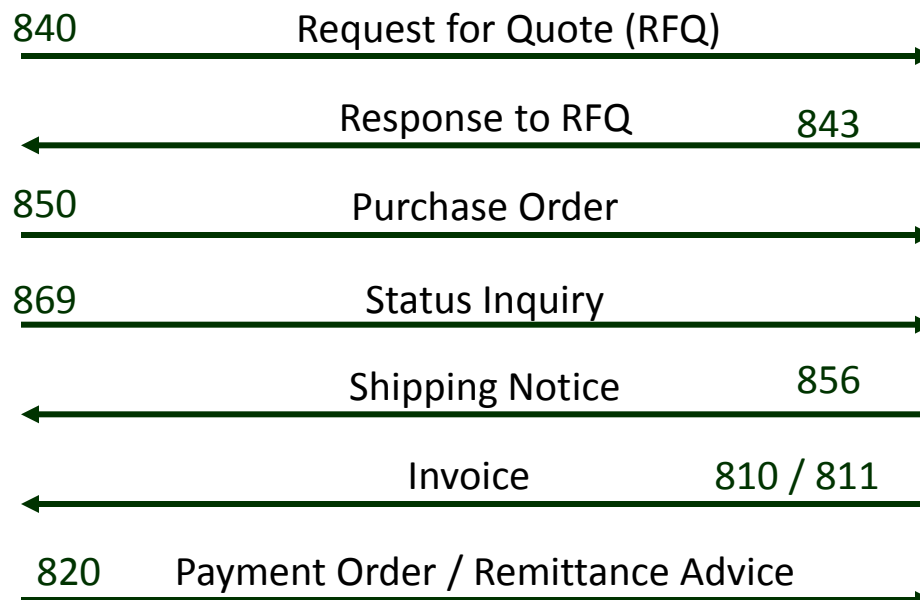
- Better, faster exchange of business information
- Reduced administrative costs
- Fewer errors
- Improved customer service



Business Activities and EDI

Buyer

Seller



What Is Financial EDI (FEDI)?

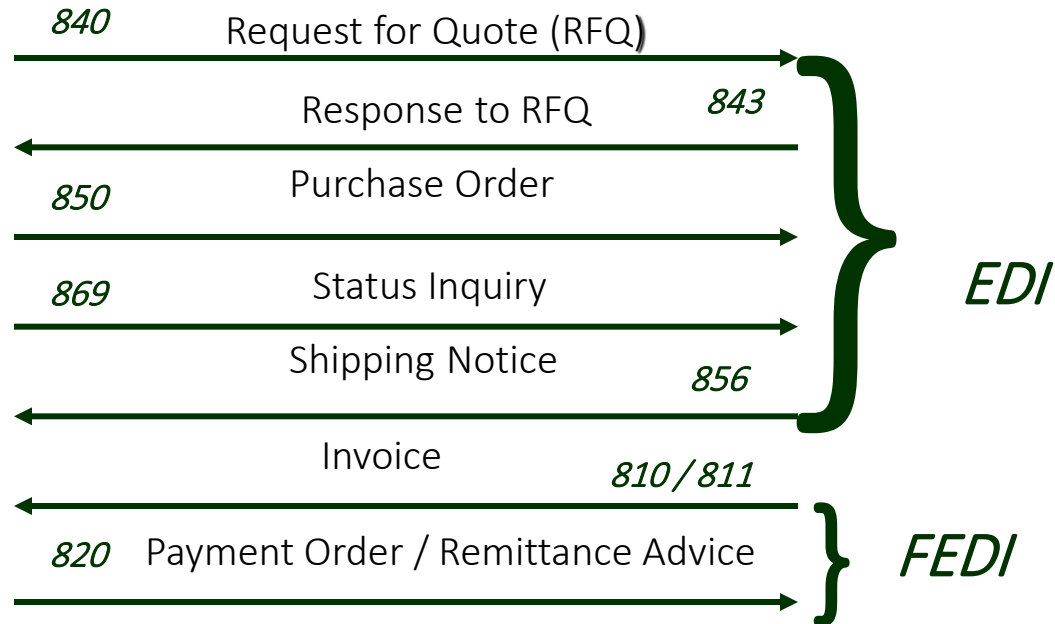
The electronic transfer of payments, payment-related information or other financial documents in a standardized, machine-readable format



Business Activities and EDI

Buyer

Seller



Financial EDI

Buyer



Buyer's Financial Institution



Payment Order and

*Remittance Advice
820*

*CTX with 820
Remittance
Advice*



*Invoice
810*

Seller

Payment Notification and

*Remittance Advice
820*

Seller's Financial Institution



Financial EDI Benefits and Barriers

Benefits

- Improved processing efficiency and reduction of costs
- Predictable and accurate cash management
- Enhanced security of payments
- Improved customer service

Barriers

- Complexity and cost of implementation
- Limited EDI/financial EDI capable trading partners
- Limited support in banking system
- Complexity of standards

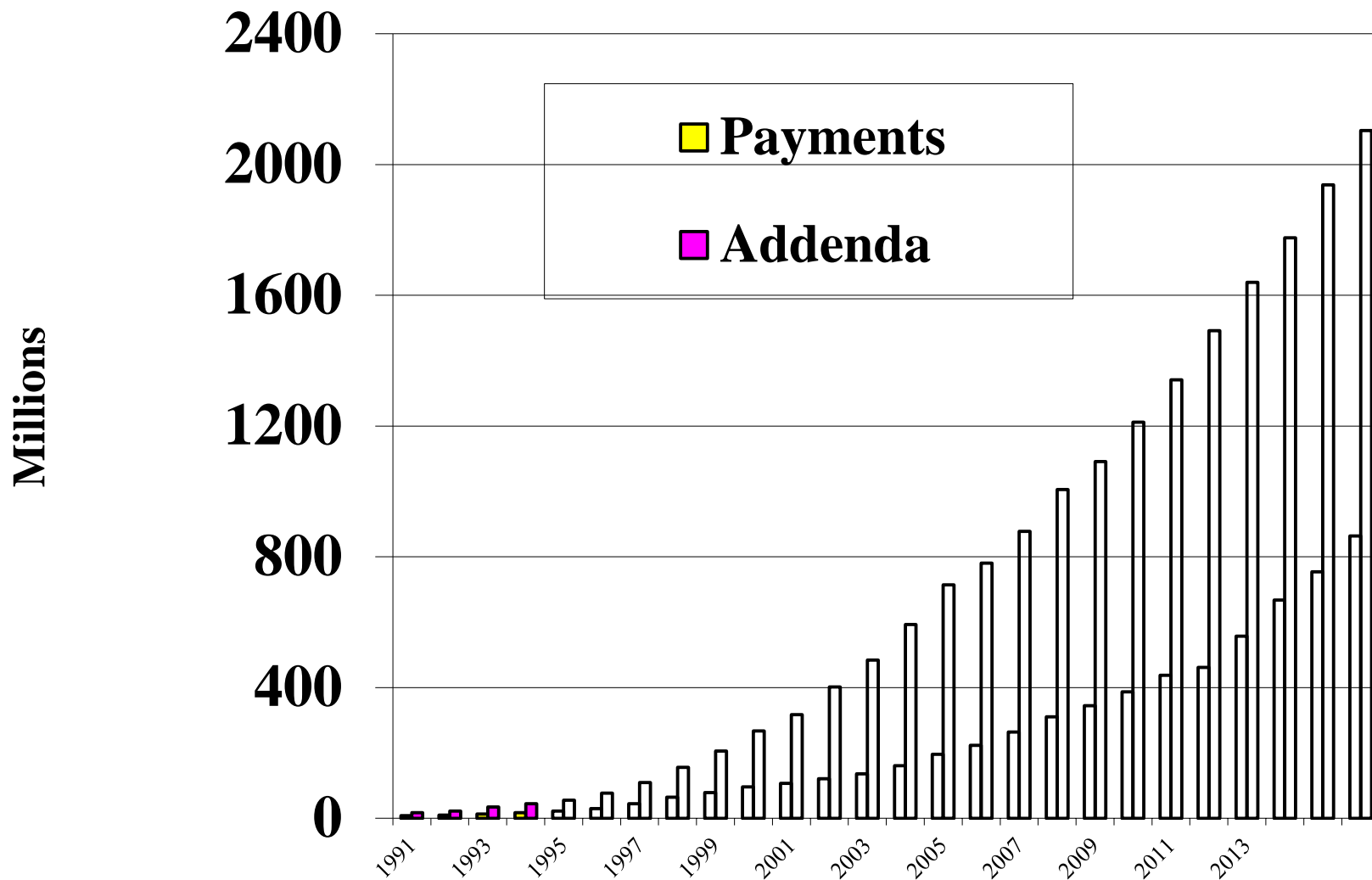
Factors Creating Increased Focus on Financial EDI

- Health care payments
- Increased electronic business-to-business payments
- Federal government mandates
- NACHA requirement to provide remittance data
- Electronic Federal Tax Payment System (EFTPS)
- Mandated child support payments
- State tax and vendor payments

Financial EDI and the Automated Clearing House (ACH)



Financial EDI on the ACH Network



ACH File Structure

File Header (Record #1)

Company Batch Header (Record #5)

Entry Detail (Record #6)

Addenda (Record #7)

Entry Detail (Record #6)

Company Batch Control (Record #8)

File Control (Record #9)

Example ACH Payment Formats

PAYMENT FORMAT DESCRIPTION		EXAMPLES OF FINANCIAL EDI APPLICATIONS
<i>Corporate Payments:</i>		
CCD+	Corporate Credit or Debit with Addenda	Payment of invoices, taxes, and child support withholdings
CTX	Corporate Trade Exchange	Payment of invoices and taxes
<i>Consumer Payments:</i>		
CIE	Customer Initiated Entry	Bill payment through home banking services
PPD+	Prearranged Payment and Deposit with Addenda	Direct deposit of Social Security

Selected ACH Payment Formats with Addenda

CCD+

PPD+

CIE+



One addenda with 80 characters

CTX+

Up to 9,999 addenda with up to 80 characters each (almost 800,000 total characters per transaction)

ACH Addenda Record

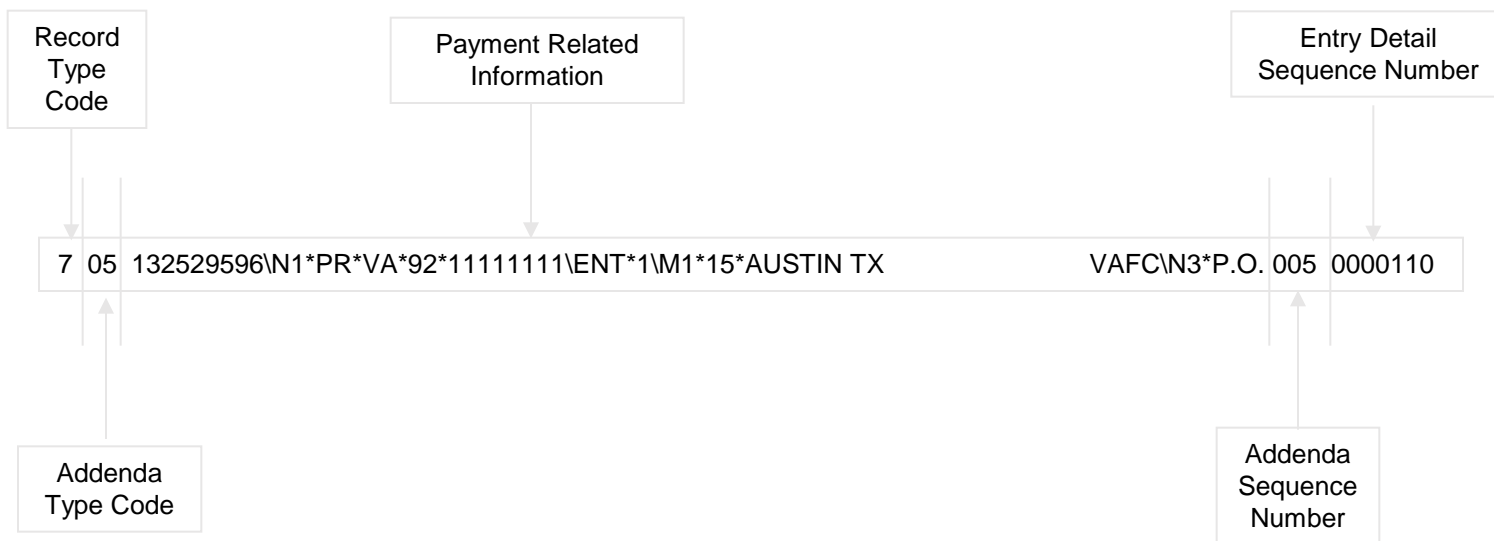
PPD ADDENDA RECORD

FIELD	1	2	3	4	5
DATA ELEMENT NAME	RECORD TYPE CODE	ADDENDA TYPE CODE	PAYMENT RELATED INFORMATION	ADDENDA SEQUENCE NUMBER	ENTRY DETAIL SEQUENCE NUMBER
Field Inclusion Requirement	M	M	O	M	M
Contents	'7'	'05'	Alphameric	Numeric	Numeric
Length	1	2	80	4	7
Position	01-01	02-03	04-83	84-87	88-94

CCD ADDENDA RECORD

FIELD	1	2	3	4	5
DATA ELEMENT NAME	RECORD TYPE CODE	ADDENDA TYPE CODE	PAYMENT RELATED INFORMATION	ADDENDA SEQUENCE NUMBER	ENTRY DETAIL SEQUENCE NUMBER
Field Inclusion Requirement	M	M	O	M	M
Contents	'7'	'05'	Alphameric	Numeric	Numeric
Length	1	2	80	4	7
Position	01-01	02-03	04-83	84-87	88-94

ACH Addenda Record



Terms Describing EDI Contents

<i>Data element</i> - one piece of information	(Letters) A B C
<i>Data segment</i> - grouping of data elements	(Words) D A T A
<i>Transaction set</i> - combination of data segments representing a standard business document	(Sentences) E D I I S U S E F U L

More EDI Terms

- An element separator is a character that separates the various EDI data elements. This character is typically an asterisk “*” but can be defined to be another character.



- A segment terminator is a character that indicates the end of a segment. This character is typically a back slash “\” but can be defined to be another character.



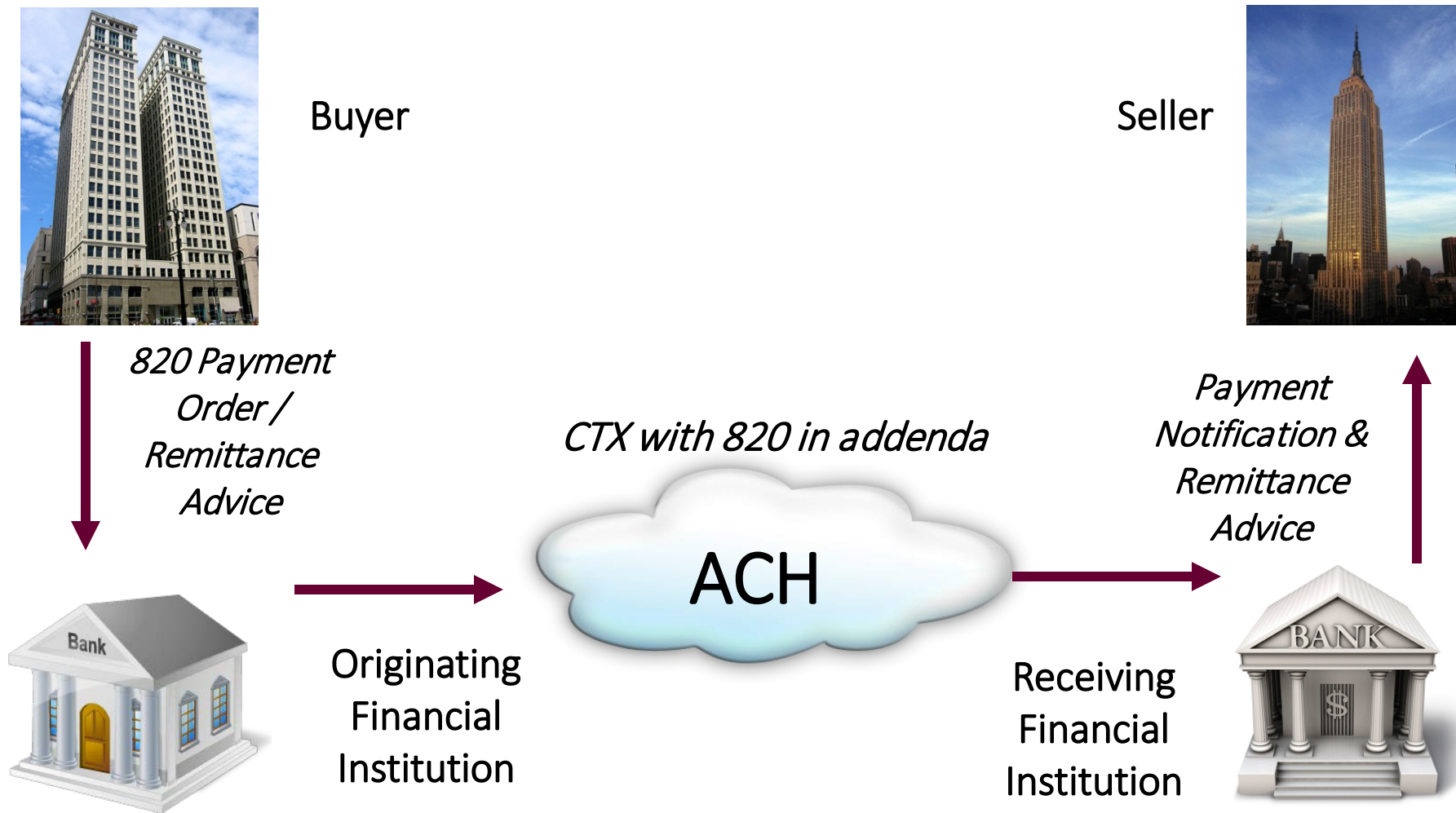
ANSI X12 Transaction Sets in the ACH Network

- 820 - Payment Order / Remittance Advice
 - ✓ Including the “STP 820” limited segments
- 835 - Health Care Claim Payment / Advice
- 813 - Electronic Filing of Tax Return Data
- 823 – Lockbox deposit records
- 521 – Income or asset offset for child support
- 103 - Abandoned property filings

BPR / BPS Data Segment

- BPR / BPS = Beginning segment for Payment Order / Remittance Advice
- Data segment containing the payment instructions
- Originating financial institution's computer reads the BPR / BPS data segment

Financial EDI flow through the ACH Network



CTX Item with 820 Transaction Set

Data Element Identifying this as an 820 Transaction Set

This Is A CTX Payment Format

COMPANY ABC COMPANY 1510014090 SETT 346 OSC 1
 EDI/EFT PAYMENT EFFECTIVE ENTRY DATE 01/04/97 CTX ORIGIN NO. 1000-0000 BATCH ID NO. 0000026

RECEIVING FINANCIAL INSTITUTION

ITEMS COMPANY NAME AUDIT NUMBER TRACE NUMBER ENTRY TYPE ACCT-NUM DISC DR AMT CR AMT

1010-1111

0009 BIG J FOOD DISTRIBUTOR INC 101000014819993 DEMAND CR 54005969 3644.38

TYPE 05 ADDN ISA*00*0000000000*00*0000000000*ZZ*012345678912345*ZZ*543219876543210*970103*113
 TYPE 05 ADDN 6*U*00304*888889340*0*T*:\GS*RA* 012345678912345 * 543219876543210 *970103*1136*888889340
 TYPE 05 ADDN *X*003040\ST*820*00000001\ **BPR*C*3644.38*C*ACH*CTX*01*102222225*DA*00006355*9044**
 TYPE 05 ADDN **036205**01*101011115*DA*54005969*970104**\TRN*1*044036200000052\REF*72*A32507\DTM*
 TYPE 05 ADDN 097*970103\N1*PR*ABC COMPANY\N1*PE*BIG J FOOD DISTRIBUTOR INC*93
 TYPE 05 ADDN *A691U1F1SAVES\N3*240 WASHINGTON ST*SUITE 1425\N4*CITIES*KS*611580201\ENT*1\RMR*
 TYPE 05 ADDN IV*CAG7010121596**1773.34*1770.24*.00\REF*PO*CAG95607157010\DTM*140*961225\ADX*3
 TYPE 05 ADDN .10*L6\REF*RB*07000\REF*XX*009\REF*TD*B\RMR*IV*SJND336122796**1037.04*1037.04*.0
 TYPE 05 ADDN 0\REF*PO*SJN95G0715D336\DTM*140*970106\RMR*IV*642842122796**716.88*716.88*.00\RE
 TYPE 05 ADDN F*PO*SKH95G0715D768\DTM*140*970106\RMR*IV*SJKPD01122696**117.12*117.12*.00\REF*P
 TYPE 05 ADDN O*SJK95G0715PD01\DTM*140*970106\SE*27*000000001\GE*1*888889340\IEA*1*888889340\

Addenda Containing The Transaction Set

BPR Data Segment

Tax Payment (TXP) Convention

TXP*123456789*94105*070301*1*10000*2*5000*3*15000\

Taxpayer Identification Number.....123456789

Tax Payment Type Code.....94105

Tax Period End Date.....March 1, 2007

Amount Type - Subcategory Code.....1 (Social Security)

Tax Amount.....\$100.00

Amount Type - Subcategory Code.....2 (Medicare)

Tax Amount.....\$50.00

Amount Type - Subcategory Code.....3 (Withholding)

Tax Amount.....\$150.00

Child Support (DED)

DED*II*ZC146*071024*13547*123456789*W*SMITH,HARR*TX99999*Y\

Application Identifier.....II (Interstate Income Withholding)

Case Identifier.....ZC146

Pay Date.....October 24, 2007

Payment Amount.....\$135.47

Non-Custodial Parent SS Number...123456789

Medical Support Indicator.....W (Not Applicable)

Non-Custodial Parent Name.....Smith, Harr

FIPS Code.....TX99999 (State, County, & Local Codes)

Employment Termination Indicator..Y (Employee Has Been Terminated)

CCD-Plus Item with Data Segment

This Is A CCD+ Payment Format

COMPANY BIG EQUIPMENT CO 3001315010 SETT 346 OSC 1
EDI/EFT PAYMENT EFFECTIVE ENTRY DATE 12-02-07 **CCD** ORIGIN NO. 1000-0000 BATCH ID NO. 0000031

RECEIVING FINANCIAL INSTITUTION

INDIVIDUAL NAME ID NUMBER TRACE NUMBER ENTRY TYPE ACCT-NUM DISC DR AMT CR AMT

1010-1111

TRACTORS INTL 071000141009993 DEMAND CR 666020 5000.21

TYPE 05 ADDN RMR*IV*101078**5000.21*5000.21*.00\

Data Segment

Remittance Advice (RMR)

RMR*IV*101078**5000.21*5000.21*.00\

Data Element Identifier.....	IV (Invoice)
Invoice Number.....	101078
Paid Amount.....	\$5,000.21
Invoice Amount.....	\$5,000.21
Discount Taken.....	\$0.00



CTX Item with 820 Transaction Set

Data Element Identifying this is
an 820 Transaction Set

This Is A CTX Payment
Format

COMPANY ABC COMPANY 1510014090 SETT 346 OSC 1
EDI/EFT PAYMENT EFFECTIVE ENTRY DATE 01-07-07 **CTX** ORIGIN NO. 1000-0000 BATCH ID NO. 0000026

RECEIVING FINANCIAL INSTITUTION

ITEMS COMPANY NAME AUDIT NUMBER TRACE NUMBER ENTRY TYPE ACCT-NUM DISC DR AMT CR AMT

1010-1111

0009 BIG J FOOD DISTRIBUTOR INC 101000014819993 DEMAND CR 54005969 3644.38

TYPE 05 ADDN ISA*00*0000000000*00*0000000000*ZZ*012345678912345*ZZ*543219876543210*970103*113
 TYPE 05 ADDN 6*U*00304*888889340*0*T*\GS*RA* 012345678912345 * 543219876543210 *070104*1136*888889340
 TYPE 05 ADDN *X*003040\ST***820***000000001\ **BPR*C*3644.38*C*ACH*CTX*01*102222225*DA*00006355*9044**
 TYPE 05 ADDN **036205**01*101011115*DA*54005969*970104**\TRN*1*044036200000052\REF*72*A32507\DTM*
 TYPE 05 ADDN 097*970103\N1*PR*ABC COMPANY\N1*PE*BIG J FOOD DISTRIBUTOR INC*93
 TYPE 05 ADDN *A691U1F1SAVES\N3*240 WASHINGTON ST*SUITE 1425\N4*CITIES*KS*611580201\ENT*1\RMR*
 TYPE 05 ADDN IV*CAG7010121596**1773.34*1770.24*.00\REF*PO*CAG95607157010\DTM*140*961225\ADX*3
 TYPE 05 ADDN .10*L6\REF*RB*07000\REF*XX*009\REF*TD*B\RMR*IV*SJND336122796**1037.04*1037.04*.0
 TYPE 05 ADDN 0\REF*PO*SJN95G0715D336\DTM*140*970106\RMR*IV*642842122796**716.88*716.88*.00\RE
 TYPE 05 ADDN F*PO*SKH95G0715D768\DTM*140*970106\RMR*IV*SJKPD01122696**117.12*117.12*.00\REF*P
 TYPE 05 ADDN O*SJK95G0715PD01\DTM*140*970106\SE*27*000000001\GE*1*888889340\IEA*1*888889340\

Addenda Containing The
Transaction Set

BPR Data Segment

820 Payment Order/Remittance Advice

ISA*00*0000000000*00*0000000000*ZZ*012345678912345*ZZ*543219876543210 *070104*113
6*U*00304*888889340*0*T*:\GS*RA* 012345678912345 * 543219876543210 *070104*1136*888889340
*X*003040\ST*820*000000001\BPR*C*3644.38*C*ACH*CTX*01*102222225*DA *00006355*9044
036205**01*101011115*DA *54005969*970104\TRN*1*044036200000052\REF*72*A32507\DTM*
097*970103\N1*PR*ABC COMPANY\N1*PE*BIG J FOOD DISTRIBUTOR INC*93
*A691U1F1SAVES\N3*240 WASHINGTON ST*SUITE 1425\N4*CITIES*KS*611580201\ENT*1\RMR*
IV*CAG7010121596**1773.34*1770.24*.00\REF*PO*CAG95607157010\DTM*140*961225\ADX*3
.10*L6\REF*RB*07000\REF*XX*009\REF*TD*B\RMR*IV*SJND336122796**1037.04*1037.04*.0
0\REF*PO*SJN95G0715D336\DTM*140*970106\RMR*IV*642842122796**716.88*716.88*.00\RE
F*PO*SKH95G0715D768\DTM*140*970106\RMR*IV*SJKPD01122696**117.12*117.12*.00\REF*P
O*SJK95G0715PD01\DTM*140*970106\SE*27*000000001\GE*1*888889340\IEA*1*888889340\

Explanation of 820 Transaction Set

BPR*C*3644.38*C*ACH*CTX*01*102222225*DA*00006355*9044036205
**01*101011115*DA*54005969*070104\

- Payment to be accompanied by remittance advice
- \$3,644.38 = total payment amount
- Credit receiver and debit originator
- Use ACH for funds transfer
- Use CTX format

Explanation of 820 Transaction Set

BPR*C*3644.38*C*ACH*CTX*01*102222225*DA*00006355*
9044036205**01*101011115*DA*54005969*070104\

- Originating financial institution's RTN = 102222225
- Debit account number 00006355
- Originating Company Identifier = 9044036205
- Receiving financial institution's RTN = 101011115
- Credit account number 54005969
- Effective entry date is January 4, 2007

Explanation of 820 Transaction Set

N1*PR*ABC COMPANY\N1*PE*BIG J FOOD DISTRIBUTOR INC*93*
A691U1F1SAVES\N3*240 WASHINGTON ST*SUIE
1425\N4*CITIES*KS*611580201\

- Payor is ABC Company
- Payee is Big J Food Distributor Inc.
- Payee's address is:

240 Washington St
Suite 1425
Cities, KS 61158-0201

Explanation of 820 Transaction Set

RMR*IV*CAG7010121596**1773.34*1770.24*.00\

- Seller's invoice number = CAG7010121596
- This is a payment for an open item
- \$1,773.34 = net amount paid
- \$1,770.24 = total invoice amount
- No discount was taken

The RDFI is required to...



Receiving
Financial
Institution

*ACH Addenda
Information*

*Deliver
information to
receivers*

Human-
Readable
Report
Format



Machine-
Readable Data
Format



...and post that payment

EDI Resources

- National Automated Clearing House Association (NACHA)
<https://www.nacha.org>
- American National Standards Institute (ANSI)
<https://www.ansi.org>
- Financial Management Service of the U.S. Treasury (FMS)
<https://www.fiscal.treasury.gov/>
- Accredited Standards Committee X12
<http://www.X12.org>



The [FedPayments Reporter service](#) can parse EDI and generate a wide variety of human-readable reports and machine-readable files for different audiences (RDFI, ODFI, Receiver, Originator).



Get all of the details and activate
the [FedPayments Reporter Service](#)