

# **What is EDI and how does it benefit my organization?**



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# INTERNATIONAL FASTENER EXPO2025

## AGENDA

- ▶ Intro
- ▶ What is EDI?
- ▶ EDI and APIs
- ▶ Security
- ▶ Common Issues & Concerns

# Intro: Jan Poehland and EDI

- ▶ This session will cover what is EDI and how does it work?
- ▶ We will discuss automating the exchange of business transactions like sales orders, purchase orders, ASNs, invoices, inventory reports and more between suppliers and customers.
- ▶ We will cover EDI terminology such as mapping, VANs and data translations as well as incorporating business logic into EDI processes.
- ▶ Jan Poehland is a software developer and has dealt with EDI for several decades.
- ▶ EDI itself is a technology, originally developed by railroad companies to transmit shipment information.
- ▶ Jan Poehland is currently overseeing and managing the connections between thousands of trading partners with millions of transactions each year.

# What is EDI?



EDI = Electronic Data Interchange

# EDI Data Formats

- ▶ X12, e.g. 850, 810, 855:  
[www.x12.org](http://www.x12.org)
- ▶ EDIFact: [www.edifact.biz](http://www.edifact.biz)
- ▶ cXML: [www.cxml.org](http://www.cxml.org)
- ▶ CSV files
- ▶ Formatted Excel spreadsheets  
Tab delimited text files
- ▶ Text files with fixed length fields
- ▶ Individual XML formats, e.g.  
EZXML, NAMM XML, custom XML  
formats
- ▶ Combination of the formats with  
multiple transactions in same file or  
individual files
- ▶ JSON data
- ▶ Many different types of APIs
- ▶ PDF or images are NOT considered  
to be EDI data formats

# X12 Format

- Fairly hard to read because data is stored in coded form
- Many different types and structures

```
1 ISA*00*          *00*          *12*5614384811    *01*9082723200    *130520*1231*U*004
2 GS*PO*ODEP001*9082723200*20130520*1231*920*X*004010
3 ST*850*0001
4 BEG*00*DS*2337133-1165**20130520
5 REF*EU*CONTROL
6 REF*QC*658509162001
7 REF*DP*Dept.*5-20-13
8 REF*CR*Rel#.*#721529
9 REF*LU*Desktop*TEST PO
10 REF*PO*P.O.*CONTROL
11 REF*CO*31405536
12 FOB*PP*DE*SHIP PER ROUTING GUIDE
13 CSH*Y
14 ITD*03*2*****60
15 DTM*001*20130613
16 DTM*002*20130603
17 DTM*010*20130528
18 N9*ME*PO COMMENTS
19 MSG*00721529
20 MSG*TEST PO 00 VW
21 N1*ST*EDI TEST ACCOUNT/OFFICE D*93*1165
22 N2*JEFF ROBERTS
23 N3*6600 N MILITARY TRL*MAILCODE N4075
24 N4*BOCA RATON*FL*334962434
25 PER*DC**TE*5614387412
26 P01*1*1*EA*1**VA*WDG43400*IN*9097983
27 CTT*1
28 SE*26*0001
29 GE*1*920
30 IEA*1*000000919
```

EDIFACT is similar but uses different segment identifiers

# cXML Format

- Subset of XML
- Easy to read because of clear naming of tags and attributes
- All based on one main standard

```
- <cXML timestamp="2013-05-24" version="1.2.014" xml:lang="en-US" payloadID="20130524151136050">
  - <Header>
    + <From></From>
    + <To></To>
    + <Sender></Sender>
  - <Header>
  - <Request deploymentMode="production">
    - <OrderRequest>
      - <OrderRequestHeader orderDate="2013-05-24T15:02:15" orderID="7777777" type="new">
        - <Total>
          - <Money currency="USD">100.0000</Money>
        - <Total>
        - <ShipTo>
          - <Address addressID="" isoCountryCode="">
            - <Name xml:lang="en">Test Customer</Name>
            - <PostalAddress name="Test">
              - <DeliverTo>Test Customer</DeliverTo>
              - <Street>123 Demo Lane</Street>
              - <City>Test City</City>
              - <State>MN</State>
              - <PostalCode>55555</PostalCode>
              - <Country isoCountryCode="US">
                - <PostalAddress>
                  - <Email>
                  + <Phone></Phone>
                  + <Fax></Fax>
                - <Address>
              - <ShipTo>
            + <BillTo></BillTo>
            + <Shipping trackingDomain=""></Shipping>
            + <Contact role="purchasingAgent"></Contact>
            - <Comments xml:lang="en">Please ship asap</Comments>
          - <OrderRequestHeader>
          - <ItemOut quantity="100" lineNumber="1">
            + <ItemID></ItemID>
            - <ItemDetails>
              + <UnitPrice></UnitPrice>
              - <Description xml:lang="en">Special Widget</Description>
              - <UnitOfMeasure>EA</UnitOfMeasure>
              - <Classification domain="UNSPSC">N</Classification>
              - <ManufacturerPartID>5634564563467</ManufacturerPartID>
            - <ItemDetail>
              - <SupplierID domain="DUNS">99-999-9999</SupplierID>
            + <Distribution></Distribution>
```

# JSON Format

- Similar to XML but much more condensed
- JavaScript style formatting

```
1 {
2   "DeliverByDate" : null,
3   "CancelByDate" : null,
4   "TaxDetails" : {...}
5   "PO" : "Walmart 12.18 468",
6   "ShipMethod" : 16045,
7   "ShippingAccountNumber" : "",
8   "FreightInformation" : {...},
9   "OrderTotals" : {...}
10  "Flexfields" : {...}
11  "ProductsToBeShipped" : {
12    "Product" : [
13      {
14        "LineNumber" : 1,
15        "LineStatus" : "SHIPPED",
16        "TaxAmount" : 0,
17        "PostAction" : null,
18        "QtyOrdered" : 250,
19        "QtyShipped" : 250,
20        "CustomerLineNumber" : "1",
21        "BackorderStatus" : "",
22        "Lottable08" : null,
23        "LotAttributes" : {
24          "LotAttribute" : [
25            {
26              "LotManufacturerDate" : null,
27              "LotExpirationDate" : null,
28              "LotCustomerLot1" : " ",
29              "LotCustomerLot2" : " ",
30              "LotQuantity" : 250
31            }
32          ]
33        },
34        "TotalAmt" : 50,
35        "VendorUPC" : null,
36        "ExplodeComponents" : null,
37        "CustomerReferenceOrderID" : "2766144",
38        "Flexfields" : {
```

## Most Commonly Used EDI X12 Transactions

- ▶ 850 – Order
- ▶ 855 – Order Confirmation
- ▶ 810 – Invoice
- ▶ 856 – ASN
- ▶ 997 – Functional Acknowledgement

✱ VAN = Value Added Network



# Other EDI X12 Transactions

- ▶ 820 – Payment / Remittance Advice
- ▶ 830 – Scheduled Release
- ▶ 846 – Inventory Report
- ▶ 849 – Product Transfer Account Adjustment Response (Rebate Payment)
- ▶ 940 – Warehouse Shipping Order
- ▶ 945 – Warehouse Shipping Confirmation
- ▶ 852 – Product Activity Report
- ▶ 860 – Purchase Order Change
- ▶ 867 – Product Transfer and Resale Report

✱ VAN = Value Added Network



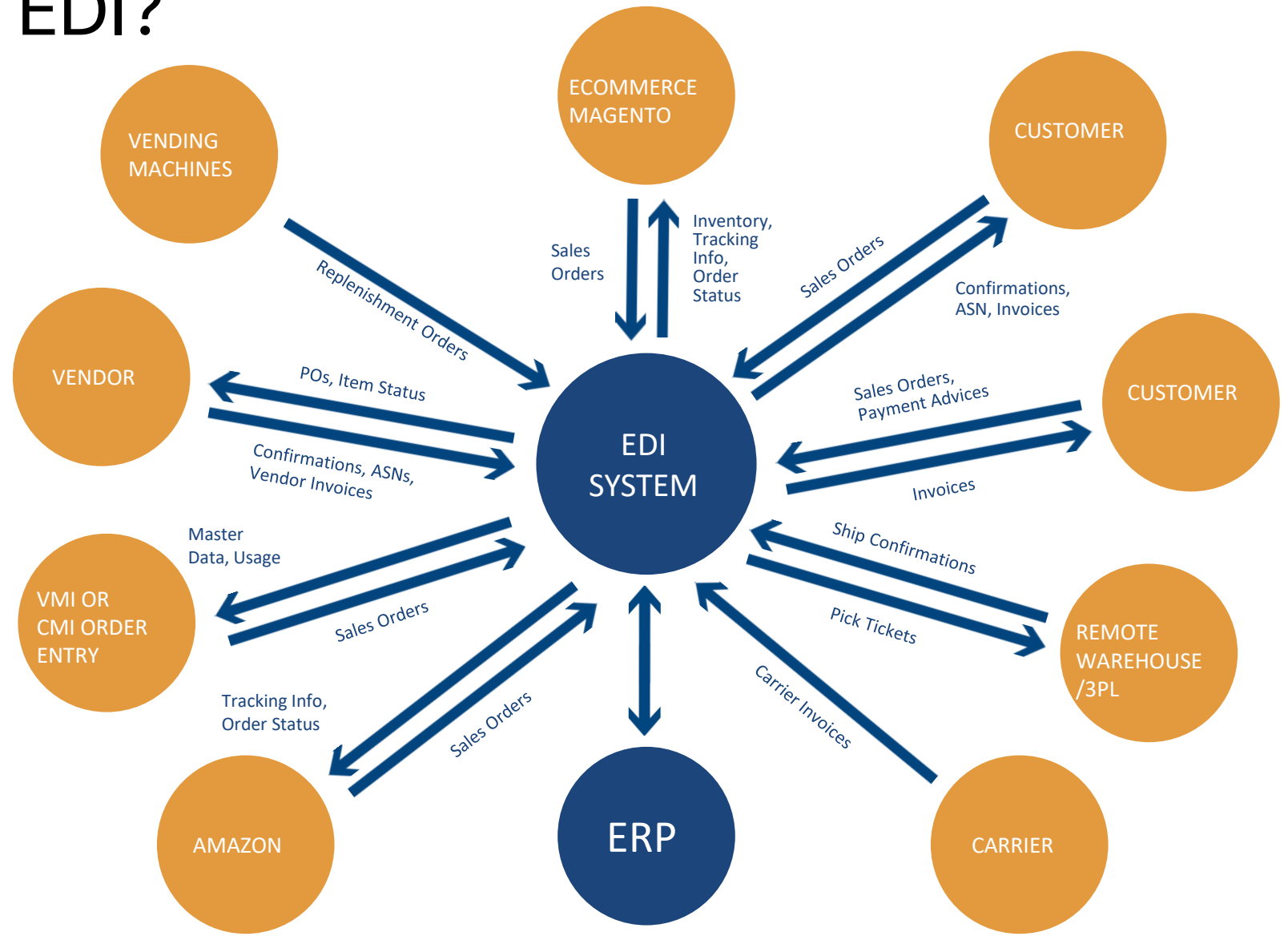
# EDI Process & Sequence

## Sales Order Example

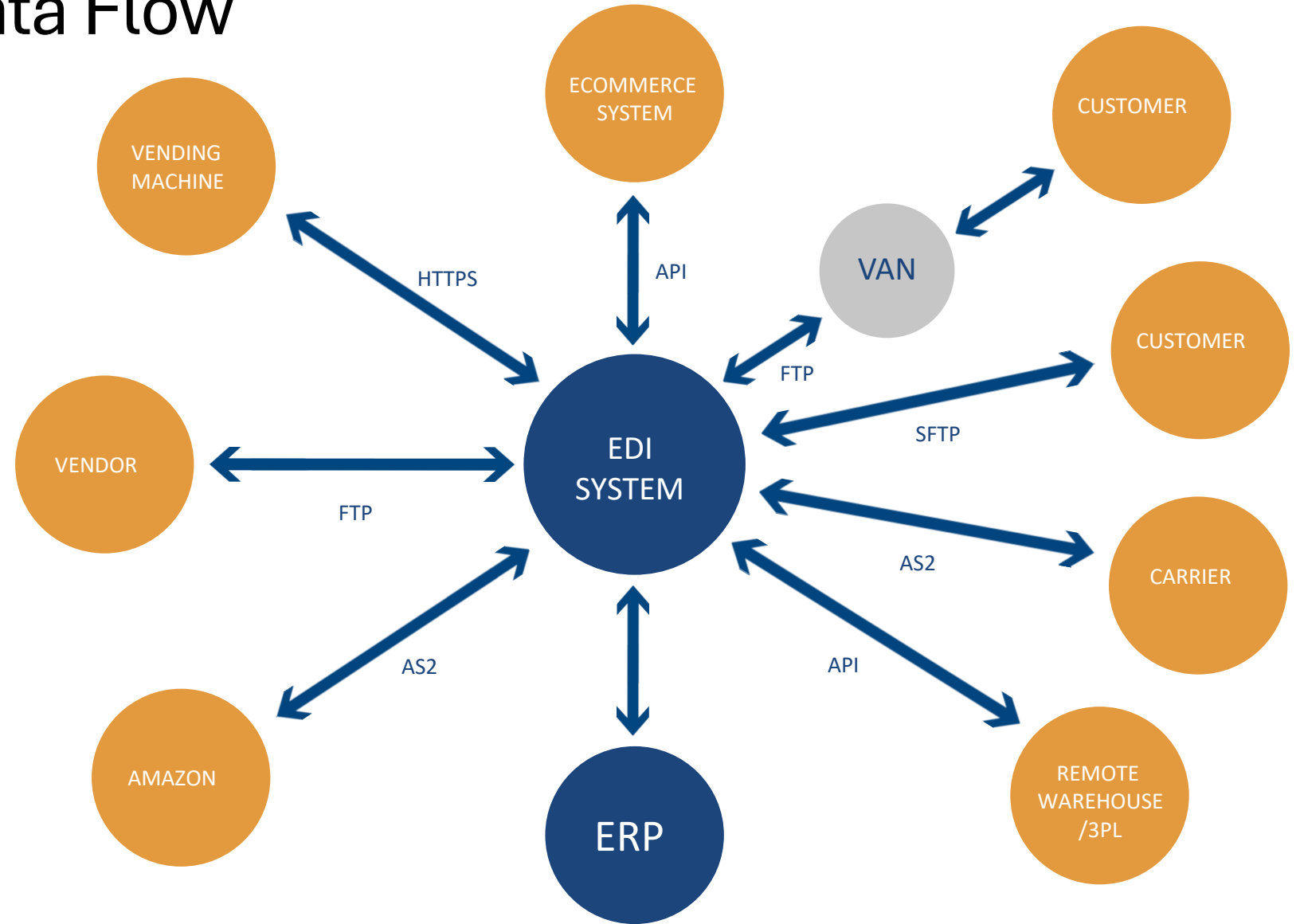
An acknowledgement to each EDI document sent is called a 997 (represented by the checkmark).



# What is EDI?



# EDI Data Flow



# EDI & Security

- ▶ Constantly assessing and updating protocols and systems, performing security checks & penetration tests.
- ▶ Zero-trust principle for all connections: Nobody has access to anything unless authorized by you (the customer).
- ▶ Establish safeguards like off-site backups, failover systems.
- ▶ All communication protocols built into EDI systems should take security into account, for example preferring SFTP over FTP and preferring HTTPS over HTTP whenever and wherever doable with trading partners.



# Common Issues & Concerns

- ▶ We spend too much time doing manual data entry (resulting in errors).
  - EDI will automate data entry
- ▶ Portals are killing us.
  - EDI will automate data entry
- ▶ We don't always receive confirmations & acknowledgements.
  - EDI automatically keeps track of the status of each transaction and its acknowledgements and responses
- ▶ We have trouble handling Units of Measure & price differences.
  - EDI mappings and built-in business logic





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**Questions?**

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**Thank you!**

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