



IVAN SAMPLE

EDI (Electronic Data Interchange)

Internal High-Level Overview



Document Revision History

Revisions			
Name	Date	Version	Description
Ivan V Santos	11-23-2015	1.0	Initial Draft
Dwight Schrute	11-24-2015	1.1	Updates/Corrections
Michael Scott	11-30-2016	1.2	Updates/Corrections
Jim Halpert	12-03-2016	Version 1 FINAL	Technical Updates/Format
Ivan V Santos	12-17-2016	2.0	Post SPS Commerce Implementation

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About This Document

TIP: *If viewing on a computer, use the navigation pane. Go to the top and click the [view tab](#) → click the [navigation pane box](#) in the show section → also make sure you are in [print layout view](#).*

Purpose

This document has been created with the intentions of providing a foundational understanding of how our EDI processes work. An EDI high-level business overview and a high-level technical process overview will be covered.

Audience

This document is only to be used by Sample Co. employees. It will be most beneficial for those that need to acquire a better understanding of the EDI process or a quick reference guide.

Help & How-To Resources

EDI Links:

- (EDI Internal Links, if any)
- EDI Trading Partner Profile *(Request from team)*

Contacts

- Email: EDIadmin@sampleco.com
- EDI Team:

Michael Scott	Director of EC Business/Customer Compliance
Dwight Schrute	EC Business Manager
Jim Halpert	EC Coordinator
Andy Bernard	EC Business Analyst
Ivan	Administrator



1. EDI Generalities

1.1 What is EDI?

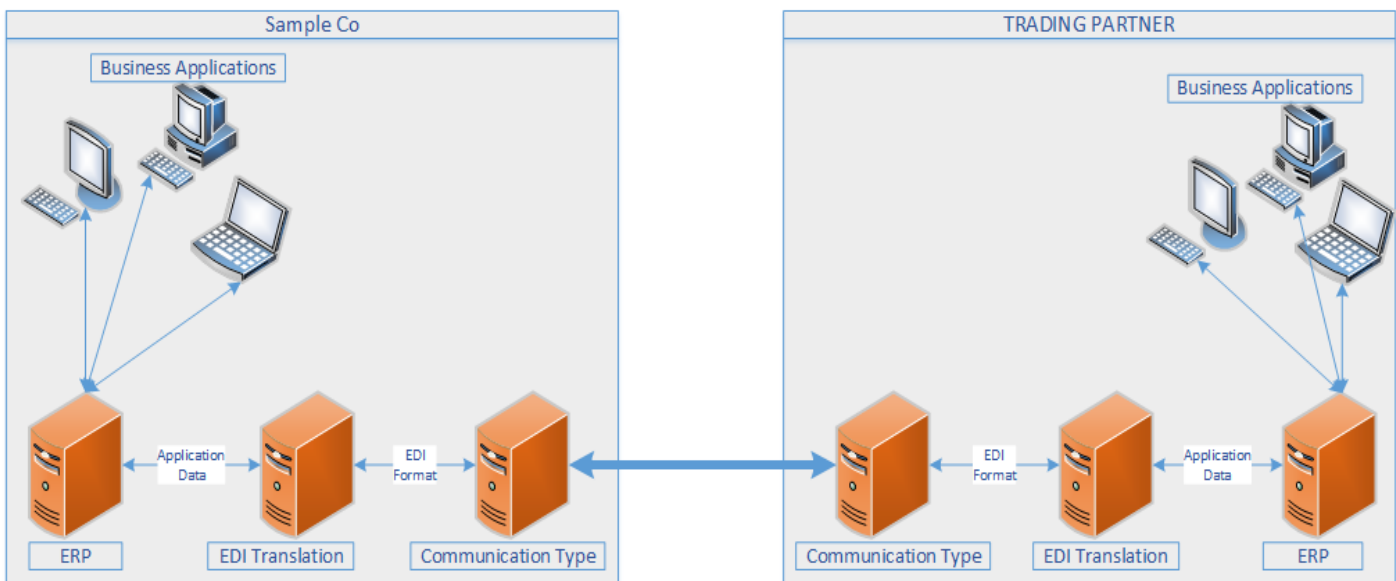
Electronic Data Interchange (EDI) is the computer-to-computer exchange of business documents/transactions between companies using a public standard format. It is a set of rules and standard message formats used instead of preparing paper and sending it through mail or using other communication methods such as telephone/fax or email.

1.2 Why EDI?

EDI is a vital tool available to every business which increases efficiency and productivity. Some advantages of implementing EDI are:

- Enhanced Customer Service
- Reduced errors
- Reduced inventory
- Faster processing time
- Reduced cost
- Increased document throughput
- Increased sales

1.3 Basic EDI Overview





2. EDI Business Implementation Overview

2.1 EDI Process Overview

EDI Implementation is done for customers who are interested in electronic trading. Once sales acquires a customer that wants to utilize EDI, our EDI team begins the implementation/onboarding process. This overview is as follows:

1. EDI team discusses with Sales team on initial inquiries:
 - Is this an established Sample Co. account; will new account need to be setup.
 - Is this a DC replenishment program: Ship direct to store; drop ship; Dot Com (direct to consumer).
 - What documents are they interested in trading?
 - What are expected timelines?
 - Any credit issues?
2. EDI team reaches out to trading partner to better understand business needs:
 - Are they EDI or FTP capable?
 - Is this a DC replenishment program: Ship direct to store; drop ship; Dot Com (direct to consumer? (This determines account EDI testing process)
 - What standards, versions and transactions will they be trading?
 - What are their connection requirements?
 - Are there any 3rd party suppliers needed/testing fees? (CommerceHub, SPS Commerce; Vendornet)
 - Supply Trading Partner with Sample Co. Trading partner profile.
 - Are there any VAS or special requirements for EDI?
3. Obtain customer trading partner sender/receiver ID and connection details.
4. Gather the customers mapping guide/transaction requirements/transaction guides. (this programming data is required)
5. The EDI team will review all gathered information and prepare for the testing phase. A BMC project ticket is created with all pertinent detail gathered during the initial communication and put into the queue.
 - a) SPS Commerce project scope created with testing timeline.
6. Once a project is prioritized through the queue, the EDI team will initiate testing and discuss with ECIT programming team on any special programming requirements.
7. Each document/transaction type will be mapped out accordingly with the customers mapping guide.
 - a) SPS maps out accordingly with mapping guides.
8. EDI team works with ECIT on mapping out each document. There are several phases for each document to be reviewed and corrected before sending test to trading partner.

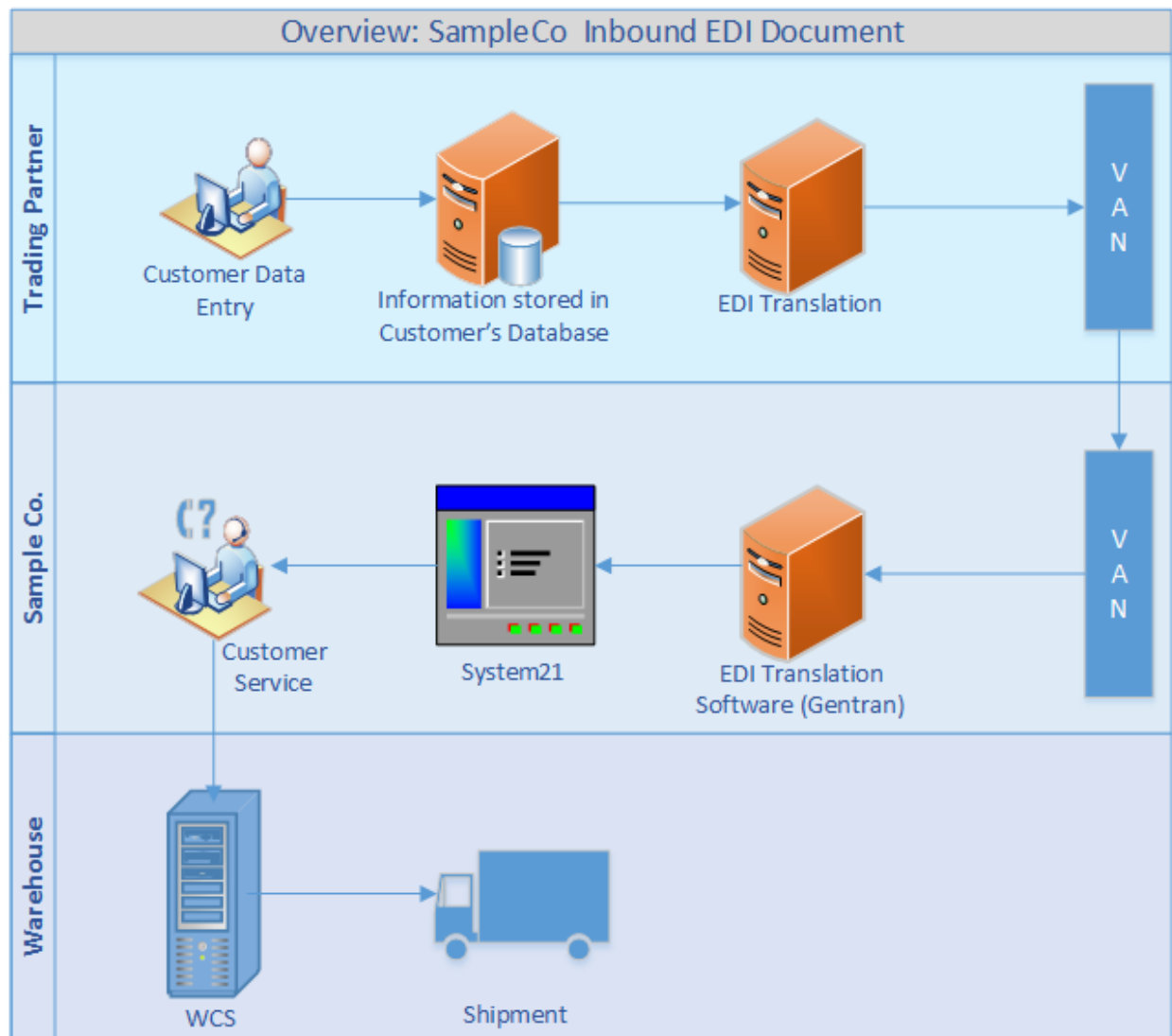


- a) Work with SPS to review data before testing, sending to customers for corrections.
- 9. Test documents are sent to trading partner or 3rd party provider until all testing has passed their systems and given final approvals.
- 10. The customer will provide a date for live order (actual transactions), which will initiate the post-production phase.
- 11. Once ready for production, a request for program promotion is sent to the application director and Sr. EDI programmer for approval. If the request is denied, the EDI team will address and correct. Once the request is approved, the program is then pushed to the production/live environment.
- 12. During post-production, the EDI team will review/monitor (standard time is 2 weeks) the program/account to confirm that all transactions are functional. Any problems spotted are documented and taken back to the testing/programming environment until the problems are resolved and ready for the live environment. This support process is repeated as necessary.
 - a) SPS commerce web forms, reporting tools to review errors.



2.1.1 Example Current Customer Transaction Process

*NOTE: With SPS, EDI Translation Software (Gentran) is bypassed – the data flows directly into the ERP (System 21). Once all customers have been migrated to SPS Commerce, Gentran will be eliminated from the process.



2.1.2 EDI Processing/Transmission Times

Inbound Processing Times:

➤ **Mon–Fri:** | 2:00a.m. | 6:00a.m. | 9:00a.m. | 12:00 p.m. | 2:00p.m. | 4:00 p.m. |

Dotcom Processing Times:

➤ **Sat–Sun:** | 4:00 a.m. - 10:00p.m. Every two hours |

ASN Processing Times:



- **Mon–Fri: | 1:30 a.m. | 9:30a.m. | 11:30a.m. | 1:30p.m. | 3:30p.m. | 5:30p.m. | 8:30p.m |**

Invoice Processing Times:

- **Mon–Fri: 8:00 p.m.**

2.1.3 Standard Implementation Process

- Gather the customer account number.
- Review price files/tax documentation/invoice requirements (discounts).
- Does this account require consolidated/manifest details (inbound/outbound)?
- Will customer be considered for “Blanket” type orders?
- Review ship label requirements to be communicated to compliance team.

2.1.4 Dot Com Implementation Process

- In order to setup an automated direct to consumer (dot com) account with Sample Co., the customer MUST be EDI compatible.
- The programming types and raw data details are the same for dot com as for retail/occupational accounts.
- Dot com accounts have a fulfillment order charge added to their price list.
- Dot com accounts expect a 48-72 hour fulfillment time.
- Review packing slip requirements to be communicated to compliance team

2.1.5 Dot Com Item Setup Process

- A Sample Co. sales representative will work with the accounts buying team to develop an assortment for the online program.
- Once the assortment is finalized, we will provide necessary item information such as UPC's, item dimensions and images to build the items to the customer's website.
- EDI team will send a UPC price file to account prior to production
- If customer SKU details are needed a cross reference table will be setup in system21
**Some accounts may require a Web Portal for item setup and customer order maintenance. (CommerceHub; VendorNet etc.)*
Retail business would utilize Data Sync; SKU space; Edgenet: UPC 3rd party catalog

2.1.6 Packing Slip/Ship label requirements

Sample Co. produces their own packing slip for drop ship programs using the customer's specifications and content format. Packing slips are submitted to the customer for approval prior to release to production.

DC or direct to store shipment labels are programmed and managed by Sample Co. compliance team

2.1.7 Shipping Methods

Sample Co. supports 4 methods of shipping:



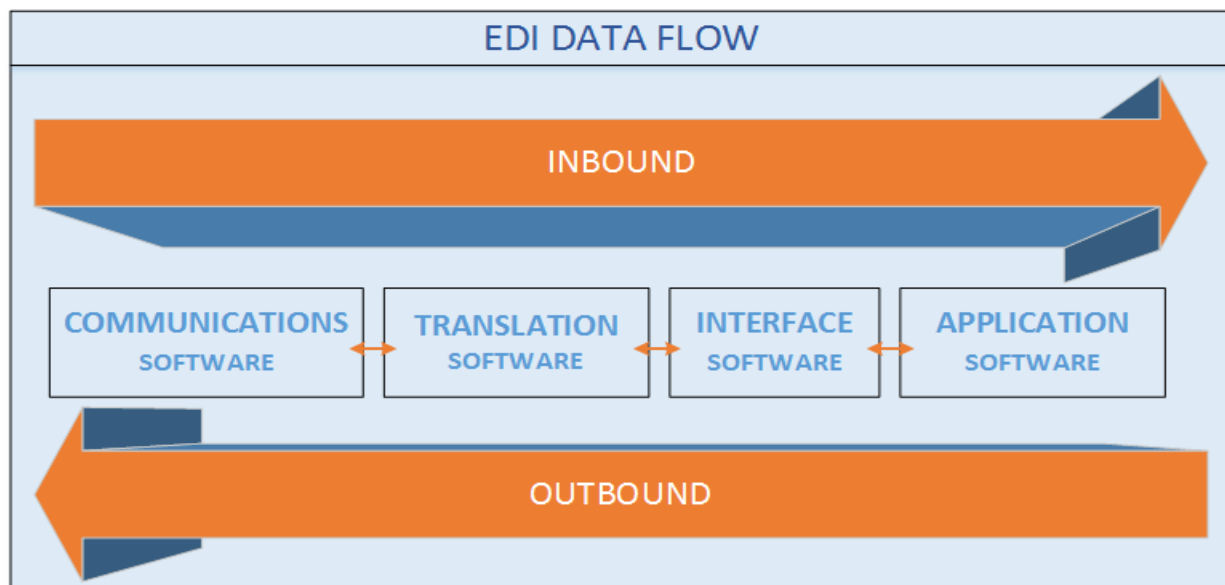
- UPS & FedEx 3rd party billing - Customer chooses their preferred carrier and assigns Sample Co. a 3rd party account number to ship orders and bill freight charges.
**Mainly used for dot com*
- Prepay & Add – Sample Co. pays freight and adds freight charges to customer's invoice or product.
- UPS or FedEx collect: Customer chooses their preferred carrier and provides Sample Co. with their carrier account number to bill freight charges.
- Freight included pricing- Sample Co. add freight into the cost of goods. Normally between 15-18% cost increase

2.1.8 Return Policy

Sample Co. compliance team will review vendor agreements and return policies for standard implementation accounts.

Sample Co. requires the customer to handle drop ship returns directly from the end consumer. The customer consolidates the returns and arranges for them to be shipped back to the Sample Co. distribution center. Sample Co. will process the returns accordingly.

2.2 EDI Technical Overview



EDI data will travel through these four different software stages during the inbound or outbound processes. The stages are broken down as follows:

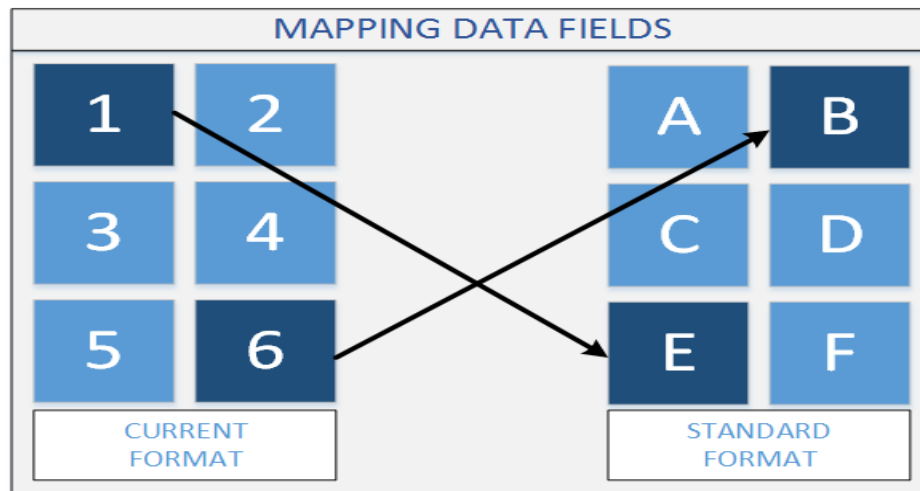
2.2.1 Communications Software:

This is the software that allows us to connect with our trading partner in order to send/receive documents. This is where data enters and leaves between us and our trading partners. Computers communicate with each other via protocols. At Sample Co., we utilize **AS2**, **VAN**, and **FTP**.



2.2.2 Translation Software:

The translation (mapping) software is responsible for taking documents from the form in which they were communicated and translates them into the correct format for a company's computer to recognize. Mapping is specifically defining the road map used to move data fields from a specific location in one file to a specific location in another file. At Sample Co., our translation software is **Gentran**. A basic mapping example is shown below:



2.2.3 Interface Software:

Interface/bridging is where the proper formatting of the EDI data happens. Interface software allows the developers to edit, format, and audit data before integrating with our application database (**System21**).

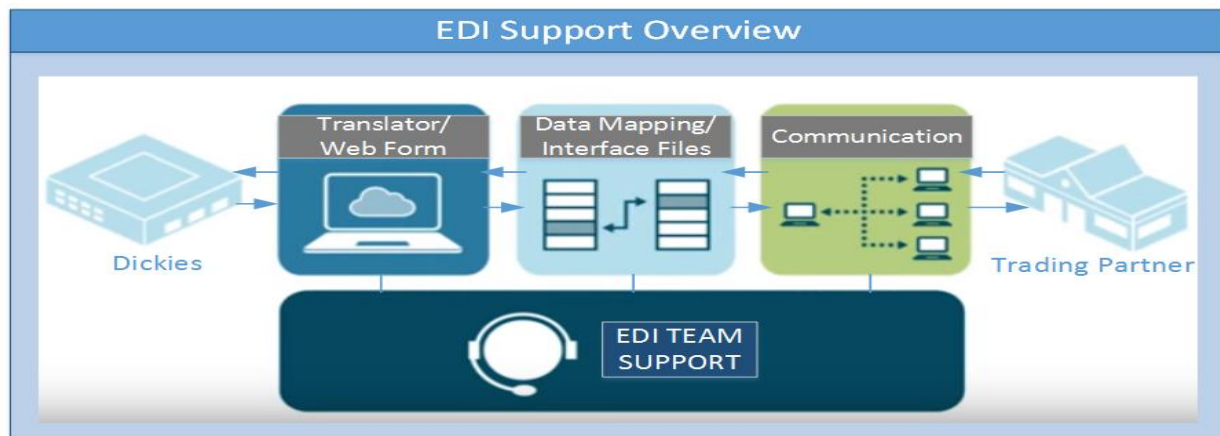
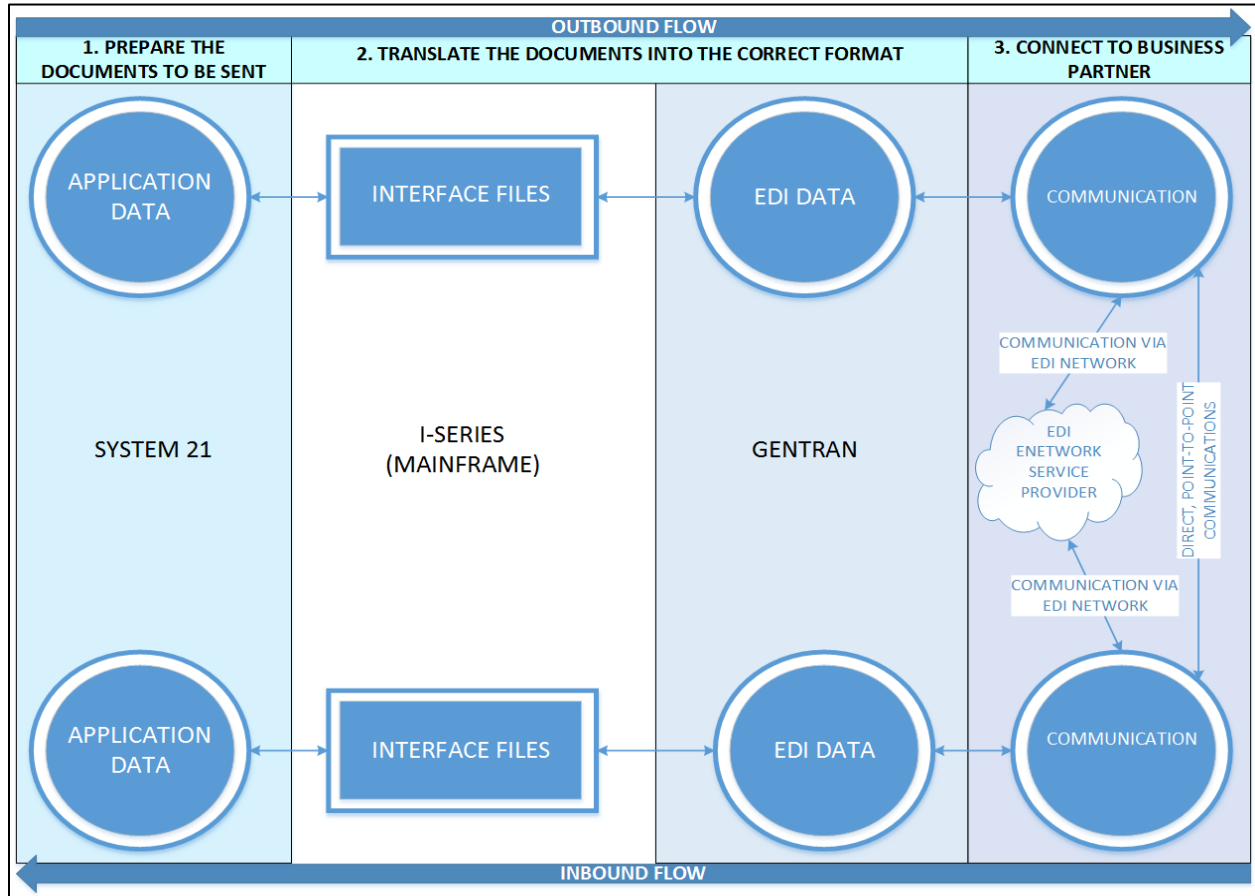
2.2.4 Application Software:

At this point, data has been prepped and integrated with our application database (**System21**). Various applications will utilize the completed data for day-to-day business operations.



2.2.5 High-Level EDI Application Overlay & Support Overview

*NOTE: With SPS, EDI Translation Software (Gentran) is bypassed – the data flows directly into the ERP (System 21). Once all customers have been migrated to SPS Commerce, Gentran will be eliminated from the process.



2.2.6 How do we communicate?

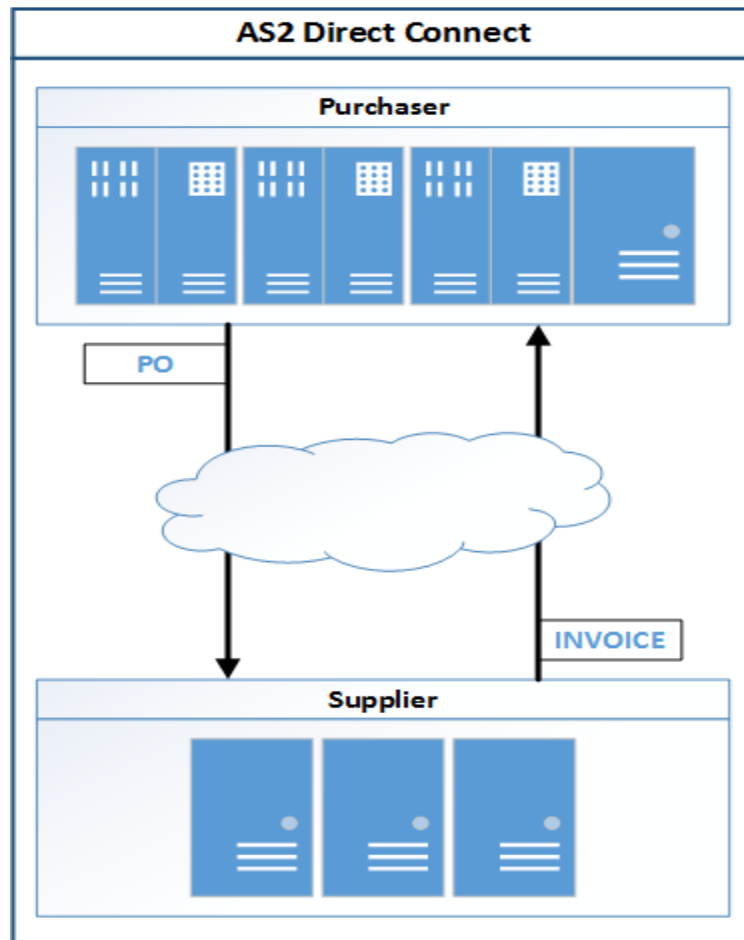
*NOTE: Processed directly from SPS to ERP (System 21).



EDI documents use several different types of data communications:

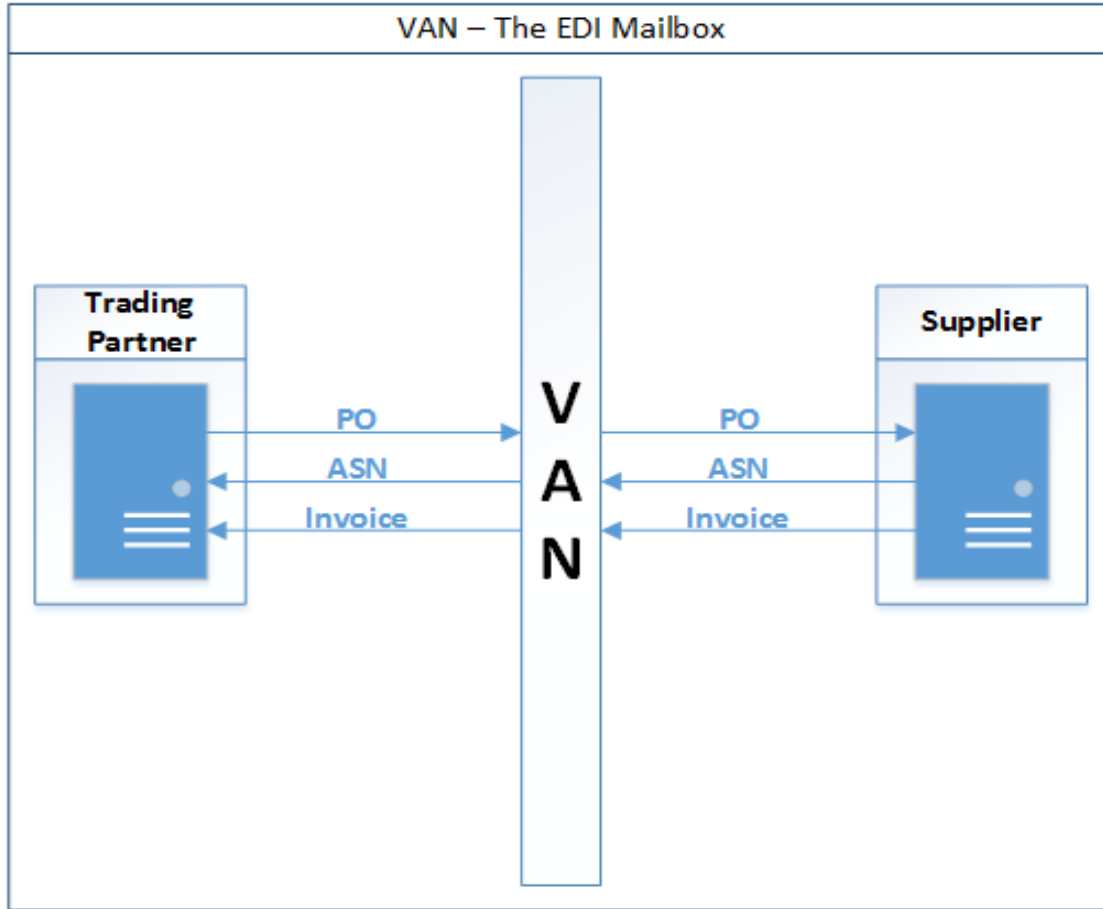
- AS2- Direct connect
- FTP- Direct connect via web setup
- VAN-Value Added Network – “Electronic Mail Box”

AS2 Direct Connect Diagram





VAN Diagram



2.2.7 EDI Formats

We currently work with 3 different type of formats

1.	ASCX12	"True EDI"
2.	CSV	flat file
3.	EASI	Embellished Activewear Standards Initiative

(CSV & EASI used for FTP connection only)

ASCx12 "True EDI"

```

ISA~00~          ~00~          ~01~193025761  ~12~5106024533  ~990414~1458~U~00200~000000001~0~T~@~
GS~PO~193025761~5106024533~000414~1458~1~X~002002*
ST~850~0001*
BEG~00~NE~12345TE STL~990414*
NTE~GEN~THIS SHIPMENT IS IMPORTANT*
NTE~GEN~SHIPMENT VIA UPS GROUND*
DTM~010~000515*
N1~BT~CORPORATE HQ~1~20ABC*
N3~374768 SUNNY ROAD*
N4~LOS ANGELES~CA~33643*
N1~ST~LA LOCATION~9~2000*
N3~28404 LA CRUZ ROAD*
N4~LOS ANGELES~CA~33643*
PO1~1~1~EA~3~PI~A $167~VN~A $167-9999*
PO1~2~12~EA~2~PI~A $178~VN~A $178-9999*
PO1~3~1~EA~2~PI~A $189~VN~A $189-9999*
PO1~4~1~EA~3~PI~A $267~VN~A $267-9999*
PO1~5~12~EA~2~PI~A $278~VN~A $278-9999*
PO1~6~1~EA~2~PI~A $289~VN~A $289-9999*
PO1~7~1~EA~3~PI~A $367~VN~A $367-9999*
PO1~8~12~EA~2~PI~A $378~VN~A $378-9999*
PO1~9~1~EA~2~PI~A $389~VN~A $389-9999*
PO1~10~1~EA~3~PI~A $467~VN~A $467-9999*
PO1~11~12~EA~2~PI~A $478~VN~A $478-9999*
PO1~12~1~EA~2~PI~A $489~VN~A $489-9999*
CTT~12*
SE~25~0001*
GE~1~1*
IEA~1~000000001*

```



CSV – Flat File

(Commonly used for Dot Com)

```
BEG,139507,88301,11/29/2011,09:10,"", "DIVERSE  
SPECTRUM","DBA B&C SPORTSWEAR","687 PALOMAR ST  
#3","",CHULA VISTA,CA,91911,USA,UPSG,  
PO1,139507,88301,1,EA,1,607645592794,...  
PO1,139507,88301,2,EA,1,607645592775,...  
PO1,139507,88301,3,EA,1,607645592787,...  
PO1,139507,88301,4,EA,1,607645592848,...  
PO1,139507,88301,5,EA,1,607645592831,...  
PO1,139507,88301,6,EA,1,607645592862,...  
PO1,139507,88301,7,EA,1,607645592855,...  
PO1,139507,88301,8,EA,1,607645592886,...
```

EASI – Embellished Activewear Standards Initiative

Very similar to the CSV format however the fields/positions have different requirements. (Commonly used for occupational and Dot com)

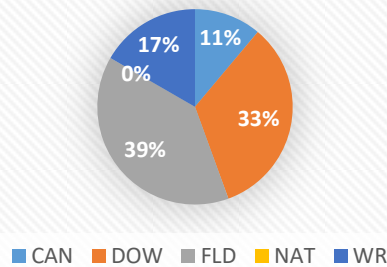


3. EDI Business Analysis

2015 Year at a Glance

2015	# of Implementation	# of Documents	Group	Group projects	
1 st Qtr.	3	11	CAN	2	11%
2 nd Qtr.	8	22	DOW	6	33%
3 rd Qtr.	1	3	FLD	7	39%
4 th Qtr.	3	9	NAT	0	0%
Other	3	9	WR	3	17%
Totals	18	54		18	100%

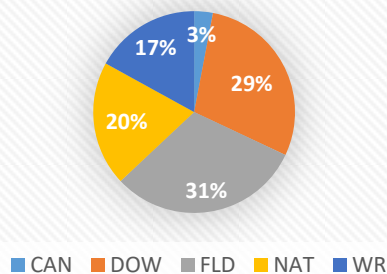
2015 EDI Implementations by Channel



2014 Year at a Glance

2014	# of Implementation	# of Documents	Group	Group projects	
1 st Qtr.	9	30	CAN	1	3%
2 nd Qtr.	11	24	DOW	10	29%
3 rd Qtr.	10	20	FLD	11	31%
4 th Qtr.	4	11	NAT	7	20%
Other			WR	6	17%
Totals	34	85		35	100%

2014 EDI Implementations by Channel

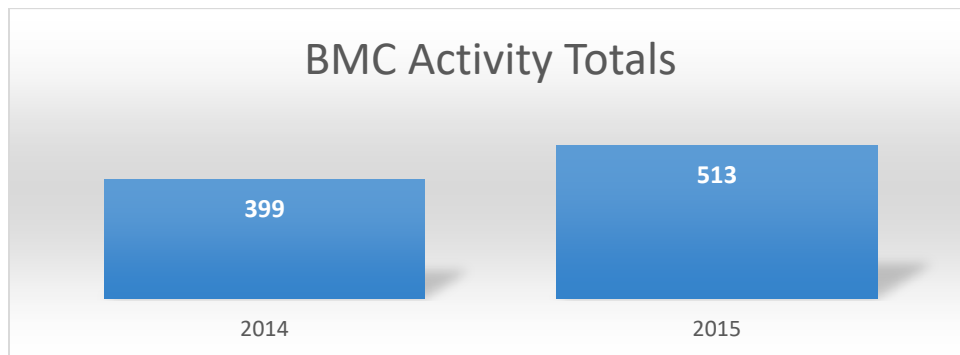




2015 vs 2014 BMC Stats

2015	BMC Activity	Incidents	Projects	Totals
	Open	21	21	
	Closed	436	35	
		457	56	513

2014	BMC Activity	Incidents	Projects	Totals
	Open	0	15	
	Closed	314	70	
		314	85	399



Summary

- Fewer implementations in 2015 (*decrease of 16*)
- Fewer documents in 2015 (*decrease of 31*)
- Fewer group projects in 2015 (*decrease of 17*)
- Fewer BMC projects in 2015 (*decrease of 29*)
- More incidents in 2015 (*increase of 143*)
- More BMC activity in 2015 (*increase of 114*)

*2016 Stats will be added Q1 2017.



4. SampleCo EDI Documents/Transactions

Sample Co. currently trades the following EDI documents:

- **810 – Invoice:** Request payment from the purchaser for products/services rendered.
- **812 – Credit/Debit Adjustment:** Notify trading partner of adjustment or billback – identifies and contains details and amounts covering exceptions, adjustment, credit or debits for goods or services.
- **816 – Organizational Relationships:** Used to 1.) Convey location address information for a company; 2.) Maintain location address information through periodic updates; and 3.) Convey location relationships, e.g., the relationship between a buying location and its related bill to, ship to and mark for locations.
- **820 – Payment Order/Remittance Advice:** Used to 1.) Order a financial institution to make payment to payee(s) on behalf of the sending party; 2.) To report the completion of a payment to payee(s) by a financial institution; and 3.) To give advice to the payee by the payer on the application of a payment made with the payment order or by some other mean.
- **824 – Application Advice:** Used to report any application errors from any business application systems, e.g., invoice edit errors, and for a financial institution (bank) to report acceptance or discrepancies to either the sender or receiver of a Payment Order/Remittance advice Transaction Set (820).
- **830 – Planning Schedule with Release Capability:** Provides for customary and established business practice relative to the transfer of forecasting/material release information between organizations.
- **832 – Price/Sales Catalog:** Report vendor product data to a retailer for future ordering purposes. Primary intention of this transaction set is to provide product U.P.C. numbers and vendor descriptive data to facilitate the matching to the retailer's internal item number identification system.
- **846 – Inventory Inquiry Advice:** Report inventory counts from a retailer to a vendor or to the retailer's system for model stock management or sales analysis purpose; or from the vendor to the retailer for notification of stock on hand.
- **850 – Purchase Order:** Used for 1.) The ordering of goods to be delivered to a single location; 2.) To order the same product SKU for delivery to multiple locations.
- **852 – Product Activity Data:** Allows a distributor, warehouse or retailer to advise a trading partner of inventory, sales and other product activity information.



- **855 – Purchase Order Acknowledgment:** Provides for customary and established business and industry practice relative to a seller’s acknowledgment of a buyer’s purchase order. It is also used to advise a retailer that the vendor has or will ship merchandise as prearranged in the vendor generated replenishment process.
- **856 – Ship Notice/Manifest:** Provide the retailer with advance information about product shipments so the retailer may better plan workloads and receipt processing.
- **860 – Purchase Order Change Request – Buyer Initiated:** Communicate changes, additions or deletions to a previously transmitted purchase order.
- **864 – Text Message:** Provides users with a capability to electronically move messages, contracts, explanations and other one-time communications.
- **869 – Order Status Inquiry:** Provides the ability to request all pertinent information relative to an entire purchase order, or selected products/services on a purchase order.
- **870 – Order Status Report:** Provides the ability to report on all pertinent information relative to an entire purchase order or selected products/services on a purchase order. Allows for the inclusion of “reasons” relative to the status of the purchase order(s).
- **997 – Functional Acknowledgment:** Provide a positive response that informs the sender if the content of the transmission received was syntactically correct.
- **753 – Request for Routing Instructions**
- **754 – Routing Instructions**

Glossary of EDI Terms

ANSI: American National Standards Institute.

ANSI ASC X12: The ANSI Accredited Standards Committee, X12 comprised of industry members is responsible for the development and maintenance of standards for Electronic Data Interchange (EDI).

ASN: Advance Ship Notice. For more information, see the entry marked 856 – Ship Notice/Manifest under VICS Electronic Data Interchange Documents.

Blanket order: A purchase order the customer makes with the supplier to reserve stock for multiple ship dates or predetermined pricing until the order is transmitted to be processed.

BOL: Bill of Lading.

Consolidated: Combine a set of order details to transmit in one complete data file to the customer

DC: Distribution Center.

Direct Connect or Direct Transmission: The exchange of data from the computer of the sending party directly to the computer of the receiving party. A third party value added service (VAN) is not used in a direct transmission or direct connect.

DUNS Number: A non-indicative 9-character number assigned and maintained by Dun & Bradstreet to identify unique business establishments.

EDI: Electronic Data Interchange is the computer-to-computer exchange of business documents, sometimes referred to as Transaction Sets, between companies using a public standard format.

EDI Translation: The conversion of application data to and from the EDI standard format.

EDI Translator: Computer software used to perform the conversion of application data to and from the EDI standard format.

EFT: Electronic Funds Transfer.

Electronic Catalog: Product information database that contains various manufacturers' product id's cross-referenced to a UPC and all other associated product information including standardized color and size coding as defined by the NRF; color and product descriptions, fabric content, etc. Additions and updates to this catalog are sent via the 832 Price/Sales Catalog Transaction Set.



Electronic Commerce: Is the process of conducting business electronically. It focuses on the technology. Electronic Commerce includes technologies such as EDI, Electronic Mail, EFT, Financial EDI, Electronic File Transfer, Evaluated Receipts Settlement, Imaging, Internet, Teleconferencing, Electronic Forms, Groupware, Facsimiles, Voice Mail, Workflow Technology, etc.

Electronic Mailbox: A term used to refer to the place where an EDI transmission is stored for pickup or delivery within a third party service provider's system. Trading partners can also maintain mailboxes within their own domain.

File Transfer protocol (FTP): A standard network protocol used to transfer computer files from one host connection to another host connection over a TCP/IP based network such as the internet.

Manifest: To combine a set of orders together so they download in a whole and create consolidated shipment.

SKU: Stock Keeping Unit. A SKU is a proprietary code or set of codes (alphanumeric) that identifies an item usually at the color and size level.

Trading Partner: The sending and/or receiving party involved in the exchange of electronic data interchange transmissions.

Transaction Set: The transaction set unambiguously defines, in the EDI standard syntax, information of business or strategic significance and consists of a transaction set header segment, one or more data segments in a specified order, and a transaction set trailer segment.

U.P.C.: Universal Product Code. It is administered by the Uniform Code Council, Inc.

VAN: Value Added Network or third party network.

Version/Release: Refers to a specific "edition" of the EDI standard. It identifies the publication of the EDI standard being used for the generation or interpretation/translation of data. Versions are released annually in the spring and become effective in the fall of the same year. They are identified by a specific 4-digit number assigned by the Uniform Code Council, Inc.