

IBM Software Group

Views from the Flight Deck

Chuck Ferrise
Manager EDI Development

WebSphere. software

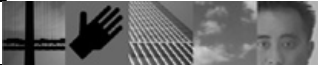


 e-business software

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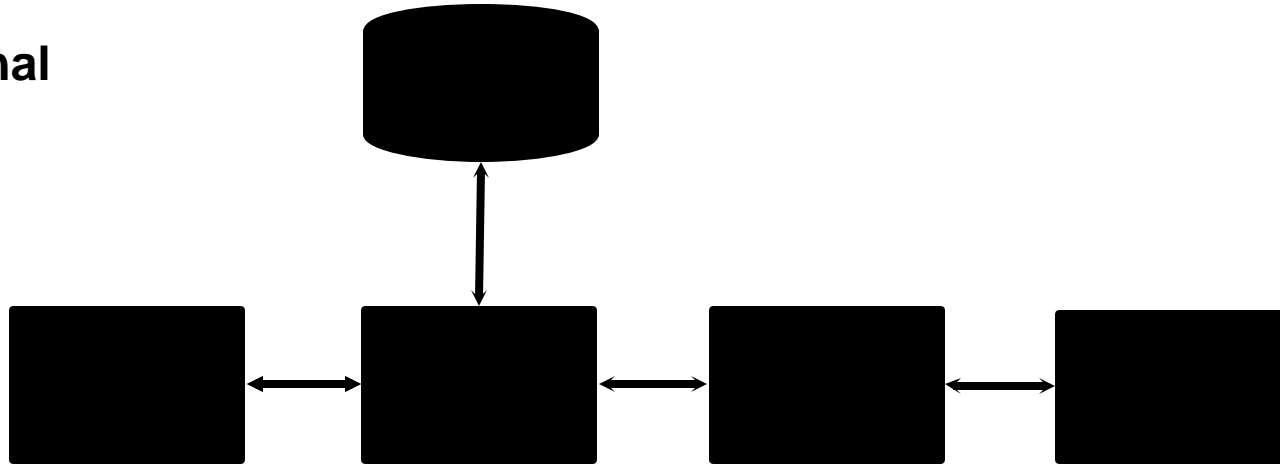
Views from the Flight Deck, Burlington Northern Santa Fe Railway Company

- Operates one of the largest railroad networks in North America
- 33,000 Route Miles
- Covering 28 States and two Canadian Provinces
- Network covers the western two thirds of the United States
- Moves more Intermodal equipment then any other Railroad in the world
- America's largest grain-hauling railroad
- Hauls enough coal to generate more than 10 percent of the electricity produced in the United States
- Employs approximately 38,000 people.
- Exchange approximately a million transactions every day

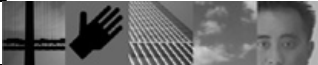
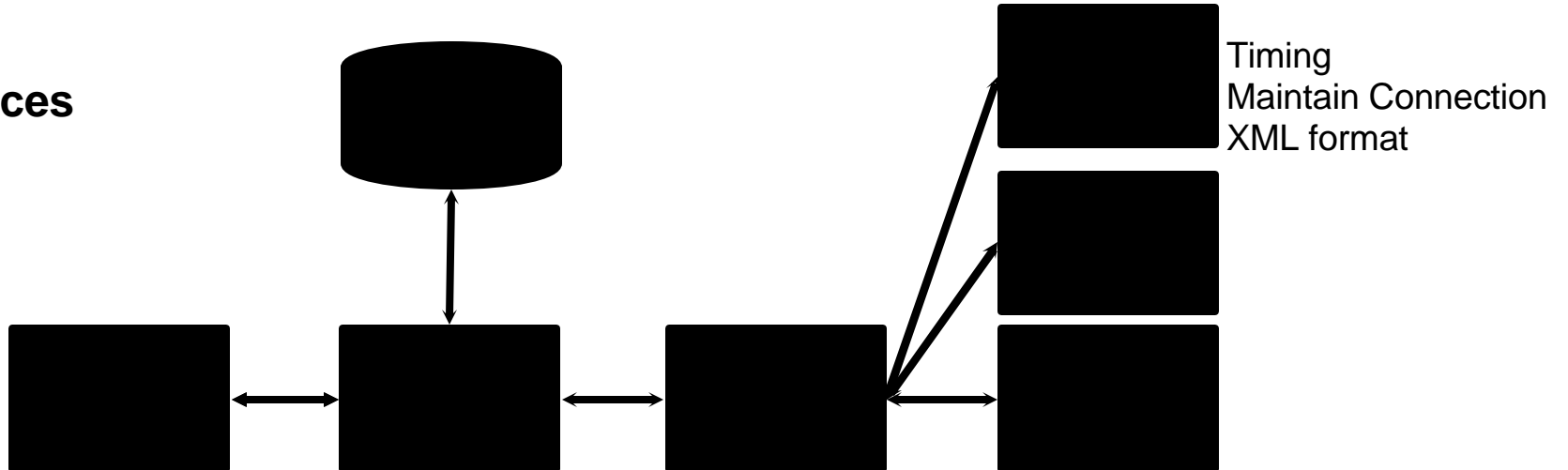


Views from the Flight Deck, WebServices

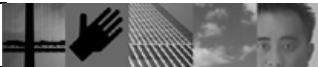
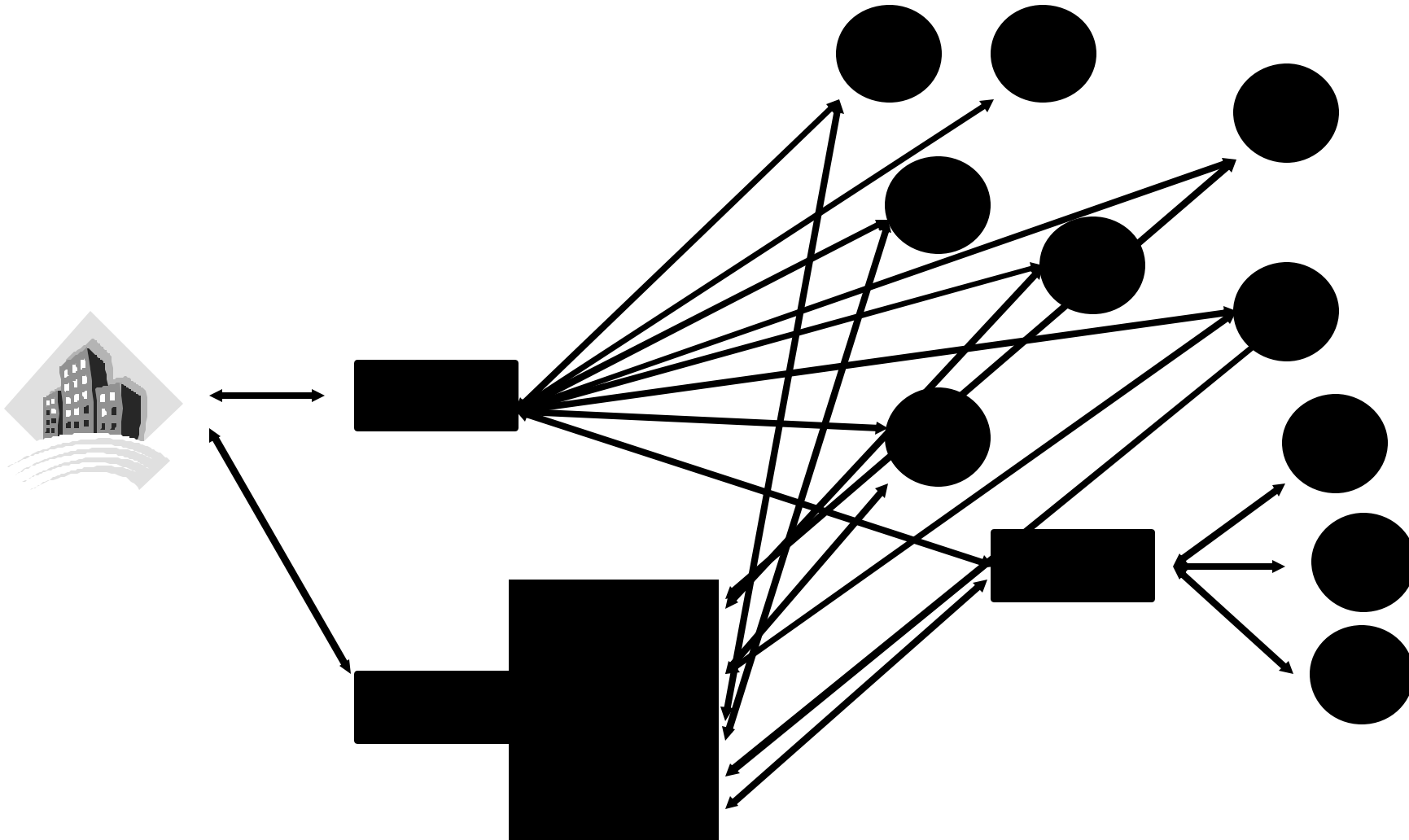
Traditional EDI



WebServices

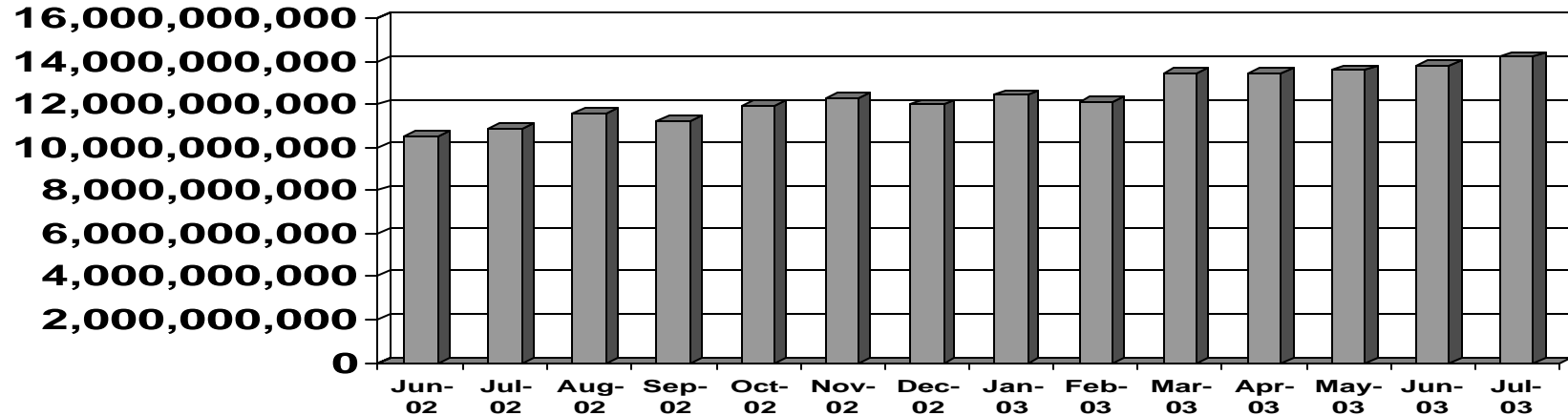


Views from the Flight Deck, B2B Connectivity

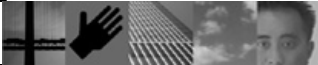
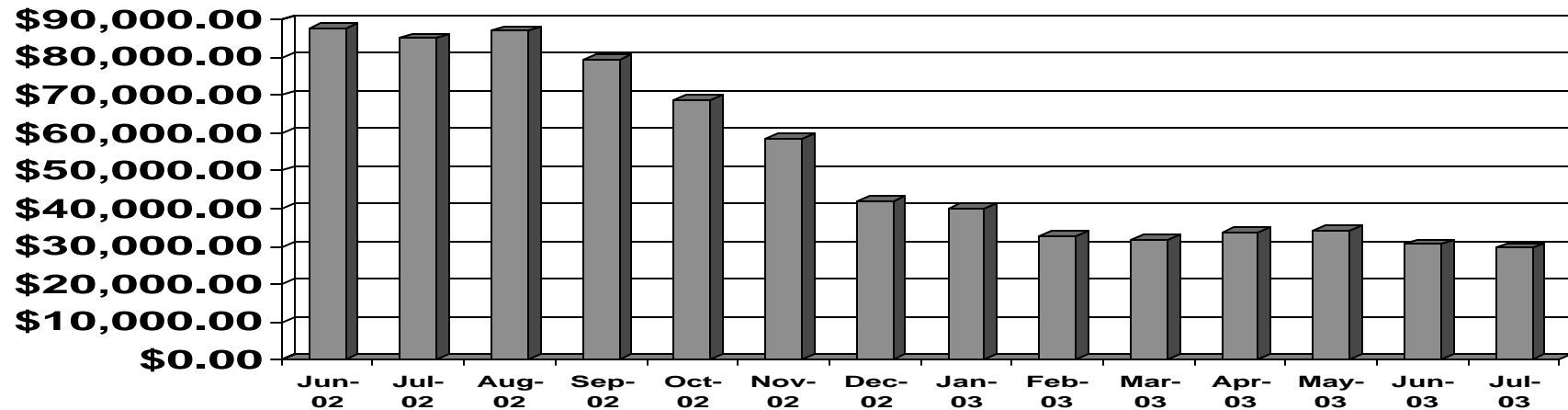


Views from the Flight Deck, B2B Connectivity

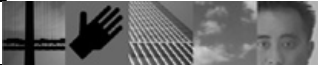
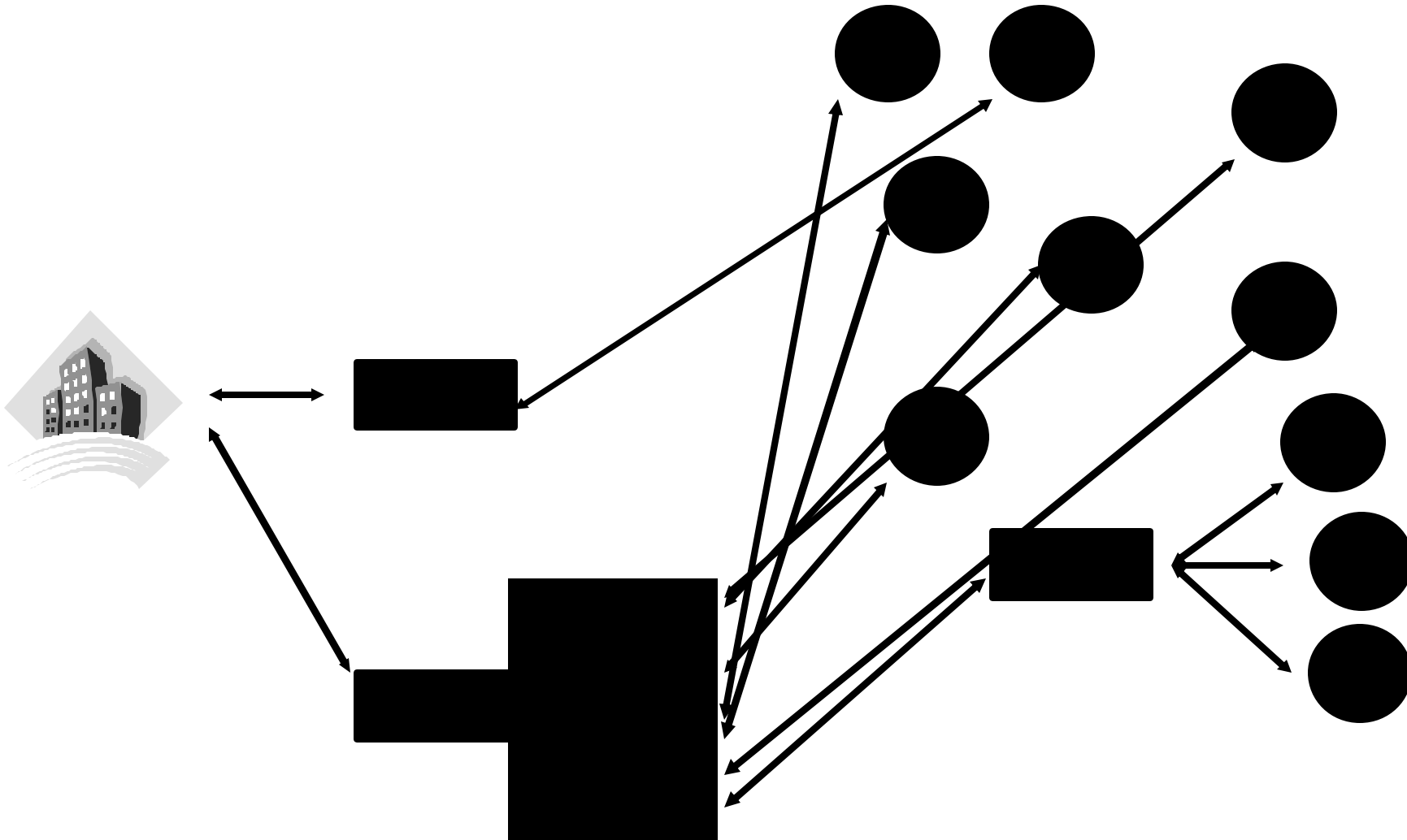
Character Cost



Van Fee

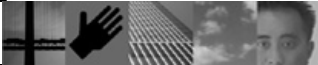


Views from the Flight Deck, Security



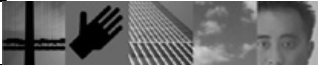
Views from the Flight Deck, Security

- AS2
- S/MIME
- PGP
- SFTP
- HTTPS
- VPN
- Hardware Solutions



Views from the Flight Deck, Data Transformation

- X12
- EDIFACT
- CLM
- TRAINII
- Flat file
- XML



Views from the Flight Deck, Data Transformation (CSV)

Microsoft Excel - BNSF BOL.xls

File Edit View Insert Format Tools Data Window Help

Type a question for help

100% Arial 10

Sort Descending


ABC Company

	A	B	C	D	E	F	G	H	I	J	K	L
1	BNSF Bill of Lading											
2												
3	Sender ID Code	Release Date		Release Time								
4	ABC Company	<input type="text"/>		<input type="text"/>								
5												
6	Bol Number	<input type="text"/>										
7												
8	Shipment Weight Definition	Shipment Weight code		Shipment Weight Code		<input type="text"/>						
9												
10	Equipment Initial	<input type="text"/>		Equipment Number		<input type="text"/>						
11												
12	Equipment Type	<input type="text"/>		Equipment Length		<input type="text"/>						
13												
14	Contract Price Quote	<input type="text"/>		Contract Price Quote Code		<input type="text"/>						
15												
16	Commodity Code	<input type="text"/>		Commodity Code Qualifier		<input type="text"/>						
17												
18	Commodity Weight	<input type="text"/>		Commodity Weight Qualifier		<input type="text"/>						
19												
20	Lading/Commodity Desc.	<input type="text"/>										
21												
22	Origin City	<input type="text"/>		Origin State		<input type="text"/>						
23												
24	Destination City	<input type="text"/>		Destination State		<input type="text"/>						
25												
26	Route 1	<input type="text"/>		Route 2		<input type="text"/>		Route 3		<input type="text"/>		
27												
28	Shipper			Address		<input type="text"/>						
29	Name	<input type="text"/>		State		<input type="text"/>	Zip	<input type="text"/>				
30	City	<input type="text"/>		Notify Phone		<input type="text"/>						
31	Notify Name	<input type="text"/>										
32												
33	Consignee			Address		<input type="text"/>						
34	Name	<input type="text"/>		State		<input type="text"/>	Zip	<input type="text"/>				
35	City	<input type="text"/>		Notify Phone		<input type="text"/>						
36	Notify Name	<input type="text"/>										
37												
38												

validation Data Primary

Draw AutoShapes

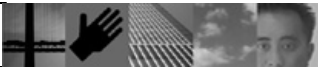
Edit



Click here to create Bill of lading

Views from the Flight Deck, Data Transformation (CSV)

```
BNSF BOL Send.csv - Notepad
File Edit Format View Help
$$$ADD ID=abcco BATCHID='CSV404AA' RECEIVER=BNSFFLAT PASSWORD=cant show that ,
SENDER ID CODE,ABC Company
RELEASE DATE,37760
RELEASE TIME,0.291666667
BOL NUMBER,=UPPER(Primary!C6)
SHIPMENT WEIGHT CODE,
EQUIP INIT,0
EQUIP NUMBER,0
EQUIP TYPE,0
EQUIP LENGTH,0
ORIGIN CITY,0
ORIGIN STATE,0
DESTINATION CITY,0
DESTINATION STATE,0
SHIPPER NAME,0
SHIPPER ADDRESS,0
SHIPPER CITY,0
SHIPPER STATE,0
SHIPPER ZIP CODE,0
SHIPPER NOTIFY NAME,0
SHIPPER NOTIFY PHONE,0
CONSIGNEE NAME,0
CONSIGNEE ADDRESS,0
CONSIGNEE CITY,0
CONSIGNEE STATE,0
CONSIGNEE ZIP CODE,0
CONSIGNEE NOTIFY NAME,0
CONSIGNEE NOTIFY PHONE,0
ENTITY 1 CODE,
ENTITY 1 NAME,0
ENTITY 1 ADDRESS,0
ENTITY 1 CITY,0
ENTITY 1 STATE,0
ENTITY 1 ZIP CODE,0
ENTITY 1 NOTIFY NAME,0
ENTITY 1 NOTIFY PHONE,0
ENTITY 2 CODE,
ENTITY 2 NAME,0
ENTITY 2 ADDRESS,0
ENTITY 2 CITY,0
ENTITY 2 STATE,0
ENTITY 2 ZIP CODE,0
ENTITY 2 NOTIFY NAME,0
ENTITY 2 NOTIFY PHONE,0
ENTITY 3 CODE,
ENTITY 3 NAME,0
ENTITY 3 ADDRESS,0
ENTITY 3 CITY,0
ENTITY 3 STATE,0
ENTITY 3 ZIP CODE,0
ENTITY 3 NOTIFY NAME,0
ENTITY 3 NOTIFY PHONE,0
ENTITY 4 CODE,
ENTITY 4 NAME,0
```



Views from the Flight Deck, Data Transformation (XML)

Partner	Control #	Type	Date/Time
PACICO	000000001	404	05/15/2003 15:54:09

View ASCII Hex Dump View Comment Log Send Mail View Entire Batch

Note: It is not possible to edit a message unless you are viewing the entire batch.

Message Detail

```

ISA*00*~*00*~*ZZ*PACICO*02*BNSF*030515*1554*U*00405*000000001*1*P*~
GS*5R*PACICO*BNSF*20030515*1554*000000001*X*004050
ST*404*000010001
BX*00*X*PP**BNSF*L*B
BNX*D
M3*R* 0*0
N9*BM*gffss
N7* dfd* dff*****TL*****D
E9*dd*IA
D9**dd*AL
N1*SH*rq
N3*ff
N4*ff*AB*ffff
PER*NT*ff*TE*817
N1*CN*0
N3*0
N4*0*0*0
PER*NT*0*TE*0
R2*bnsfi*****X
R2*0*1*****X
R2*0*2*****X
LX*1
L5*1*dd*ddd*d
L0*1***dd*dd
PI*sds*dd
SE*24*000010001
GE*1*000000001
IEA*1*000000001
    
```

Compressed
Expensive startup
Standard
Readable with training

```

<?xml version="1.0" encoding="UTF-8" ?>
<!-- edited with XML Spy v4.3.0 (http://www.xmlspy.com) by John Waedekin (Burlington Northern Santa Fe) -->
<!-- W3C Schema generated by XML Spy v3.5 NT (http://www.xmlspy.com) -->
<xsd:schema targetNamespace="BillOfLading" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xmlns="BillOfLading" xmlns:xsd="http://www.w3.org/2001/XMLSchema" xsi:schemaLocation="http://www.w3.org/2001/XMLSchema http://bnsfwebdv/edi/xml404schema.xsd">
  <xsd:complexType name="ZC1Type-BeginningSegment">
    <xsd:sequence>
      <xsd:element ref="ZC1_01-ShipmentIDNumber" minOccurs="0" />
      <xsd:element ref="ZC1_02-EquipmentInitial" minOccurs="0" />
      <xsd:element ref="ZC1_03-EquipmentNumber" />
      <xsd:element ref="ZC1_04-TransactionReferenceNumber" />
      <xsd:element ref="ZC1_05-TransactionReferenceDate" />
      <xsd:element ref="ZC1_06-CorrectionIndicator" />
      <xsd:element ref="ZC1_07-SCAC" />
      <xsd:element ref="ZC1_08-TransportTypeCode" />
      <xsd:element ref="ZC1_09-EquipmentCheckDigit" minOccurs="0" />
    </xsd:sequence>
  </xsd:complexType>
  <xsd:element name="ZC1_01-ShipmentIDNumber" type="xsd:string" />
  <xsd:element name="ZC1_02-EquipmentInitial" type="xsd:string" />
  <xsd:element name="ZC1_03-EquipmentNumber" type="xsd:string" />
  <xsd:element name="ZC1_04-TransactionReferenceNumber" type="xsd:string" />
  <xsd:element name="ZC1_05-TransactionReferenceDate" type="xsd:string" />
  <xsd:element name="ZC1_06-CorrectionIndicator" type="xsd:string" />
  <xsd:element name="ZC1_07-SCAC" type="xsd:string" />
  <xsd:element name="ZC1_08-TransportTypeCode" type="xsd:string" />
  <xsd:element name="ZC1_09-EquipmentCheckDigit" type="xsd:unsignedInt" />
  <xsd:complexType name="BXType-GeneralShipmentInformation">
    <xsd:sequence>
      <xsd:element ref="BX_01-TransactionSetPurposeCode" />
      <xsd:element ref="BX_02-TransportMethodCode" />
      <xsd:element ref="BX_03-MethodOfPay" />
    </xsd:sequence>
  </xsd:complexType>
</xsd:schema>
    
```

Expanded data structure
Less expensive startup
Flexible
Readable



Views from the Flight Deck, What to keep an eye on

- Security/Encryption
- Communication
 - Frame Relay
 - Internet
- XML
 - Standards
 - Transformation



Views from the Flight Deck,

Questions ?

