



Objectives

- **Data Flow**
- **Routing**
- **EDI Real Time Processing**
- **Data Logging**
- **Data Format Standards**
- **Enterprise Integration Bus Summary**
- **Future Vision**



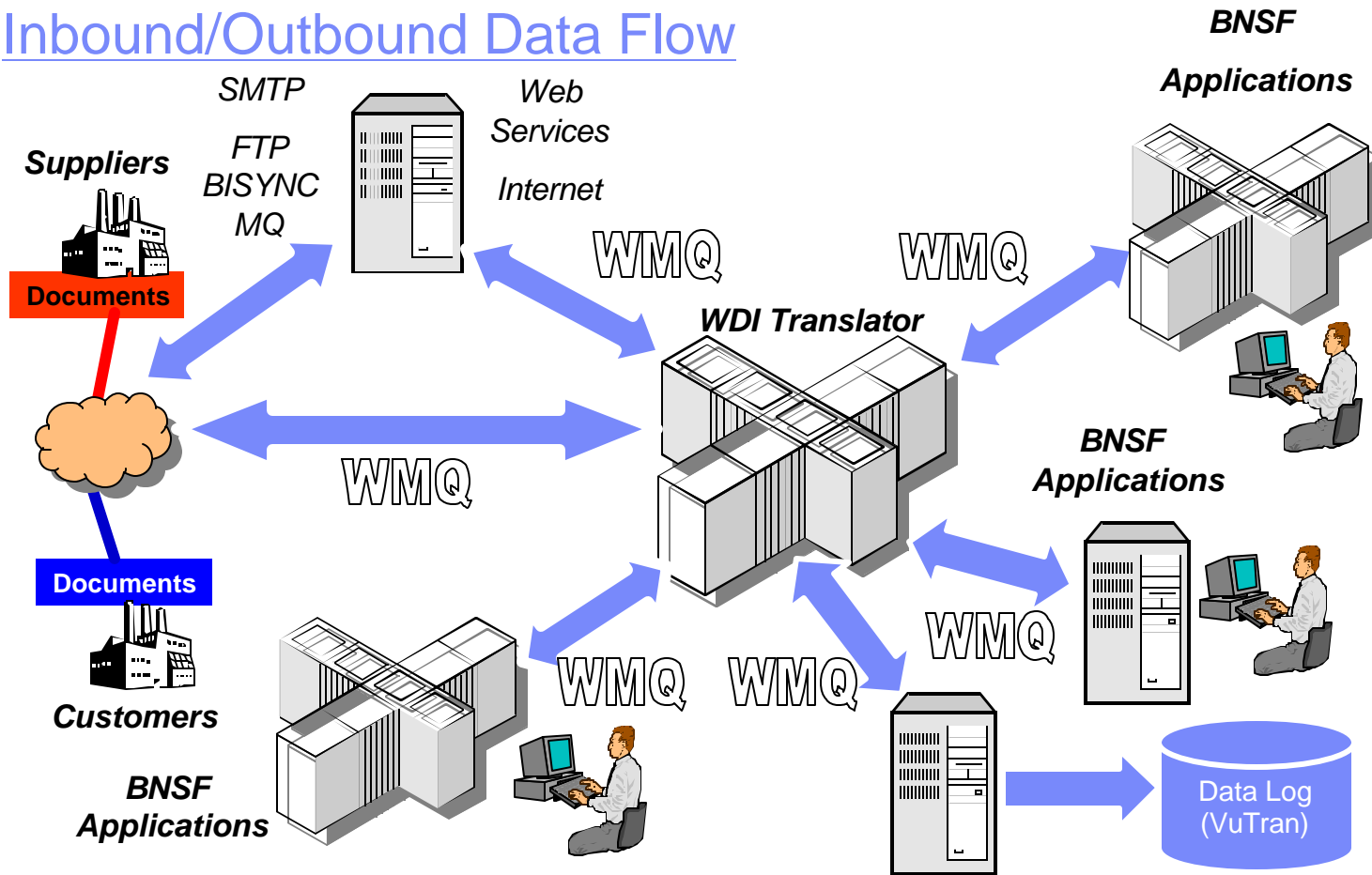
Acronyms Used

- **WMQ – WebSphere Message Queuing**
- **WDI – WebSphere Data Interchange**
- **FTP – File Transfer Protocol**
- **SMTP – Simple Mail Transfer Protocol**
- **BiSync – Bi-synchronous dial**
- **BNSF – Burlington Northern Santa Fe**
- **VANS – Value Added Networks**
- **API – Application Program Interface**
- **TS Queue – Temporary Storage Queue**



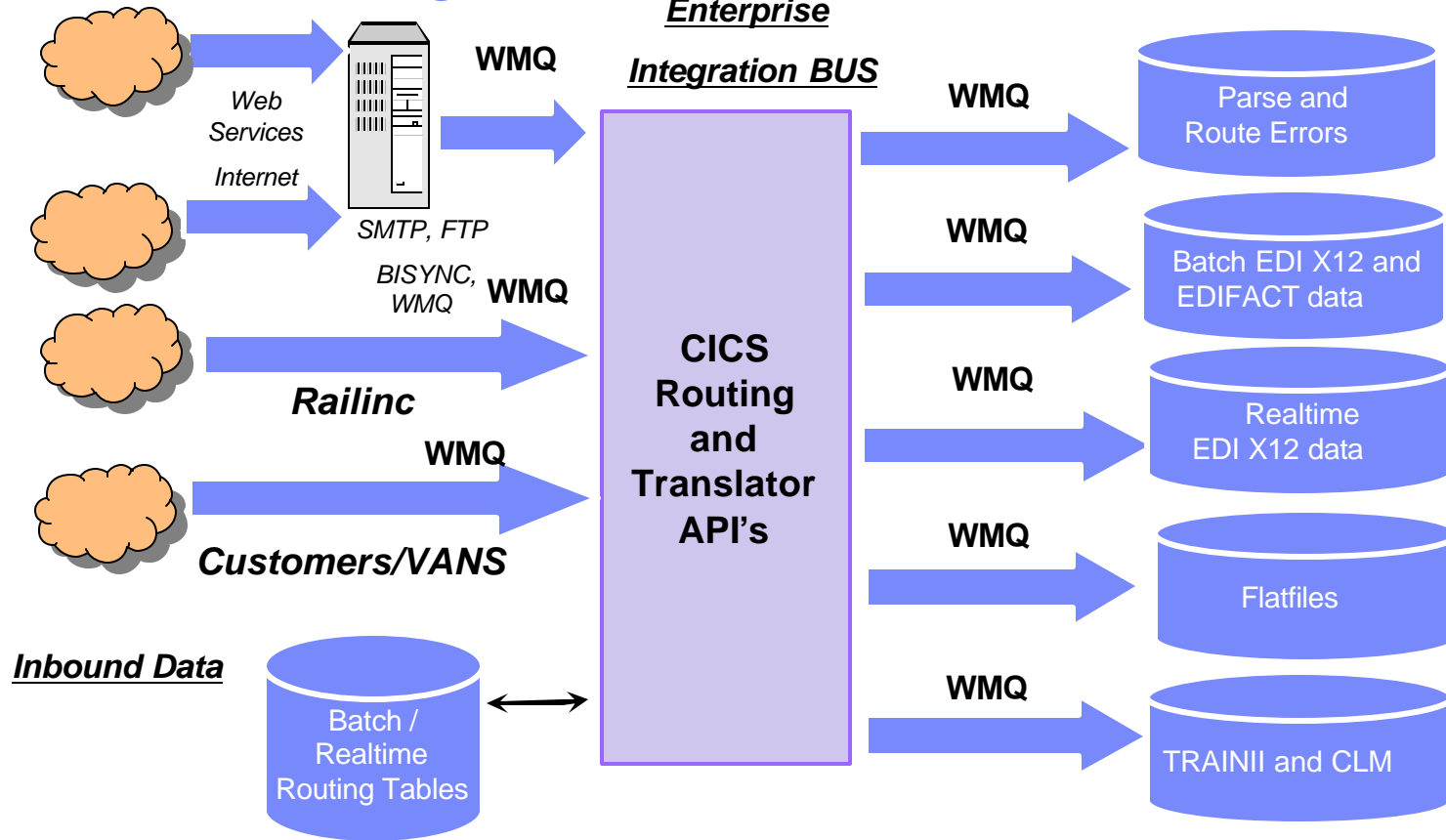


Inbound/Outbound Data Flow



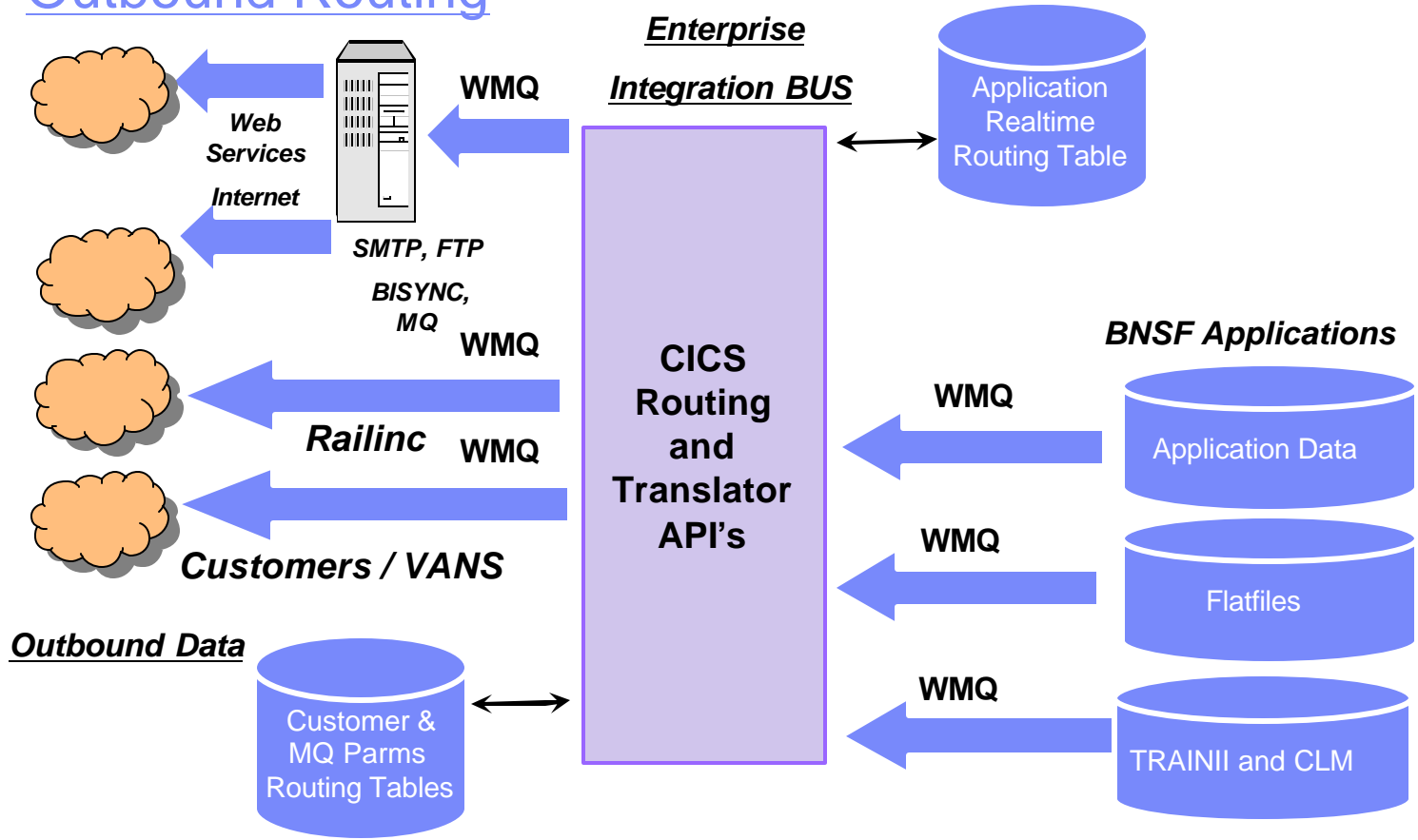


Inbound Routing





Outbound Routing





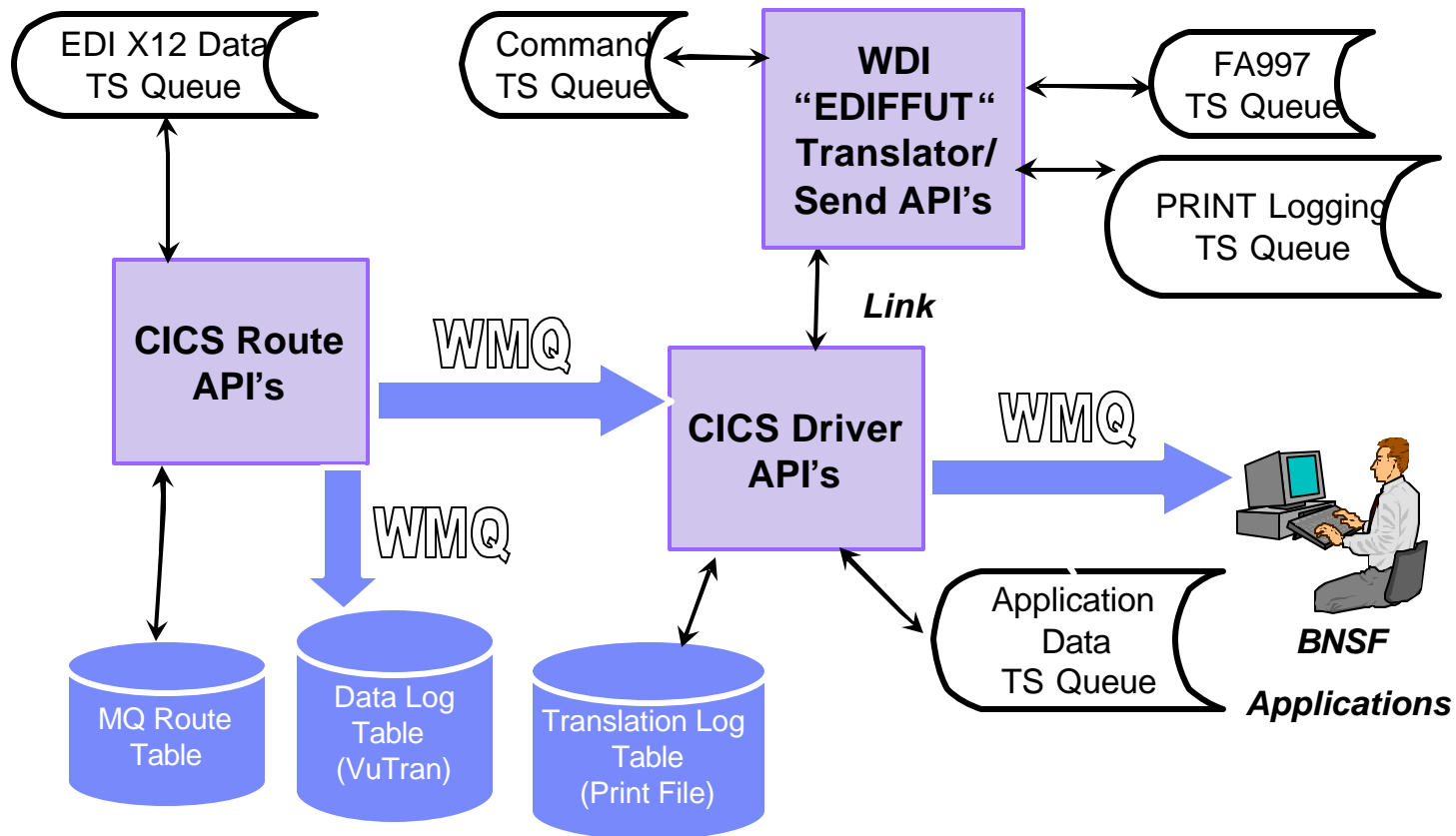
Routing/Communication Summary

- **10 Direct WMQ connection to Railinc + WMQ capable customers**
- **Multiple mainframe-to-mainframe WMQ connections**
- **Multiple mainframe-to-AIX WMQ connections**
- **Multiple AIX-to-mainframe WMQ connections**

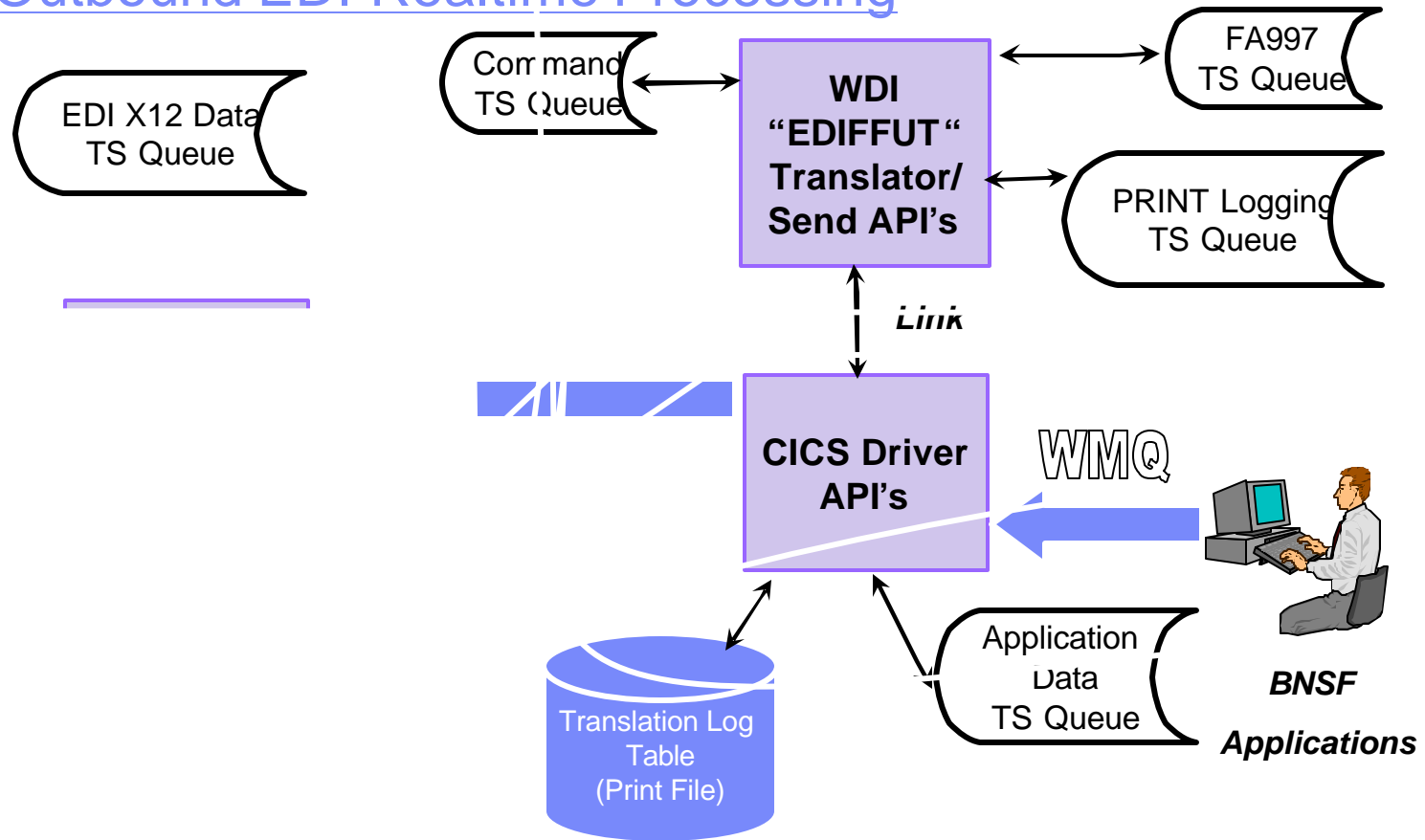
- **TCP-IP 256KB Frame Relay communication backbone**
- **ISDN 128KB communication backup**
- **SMTP, FTP, Bisync dial protocols**
- **Web Services**
- **Internet**



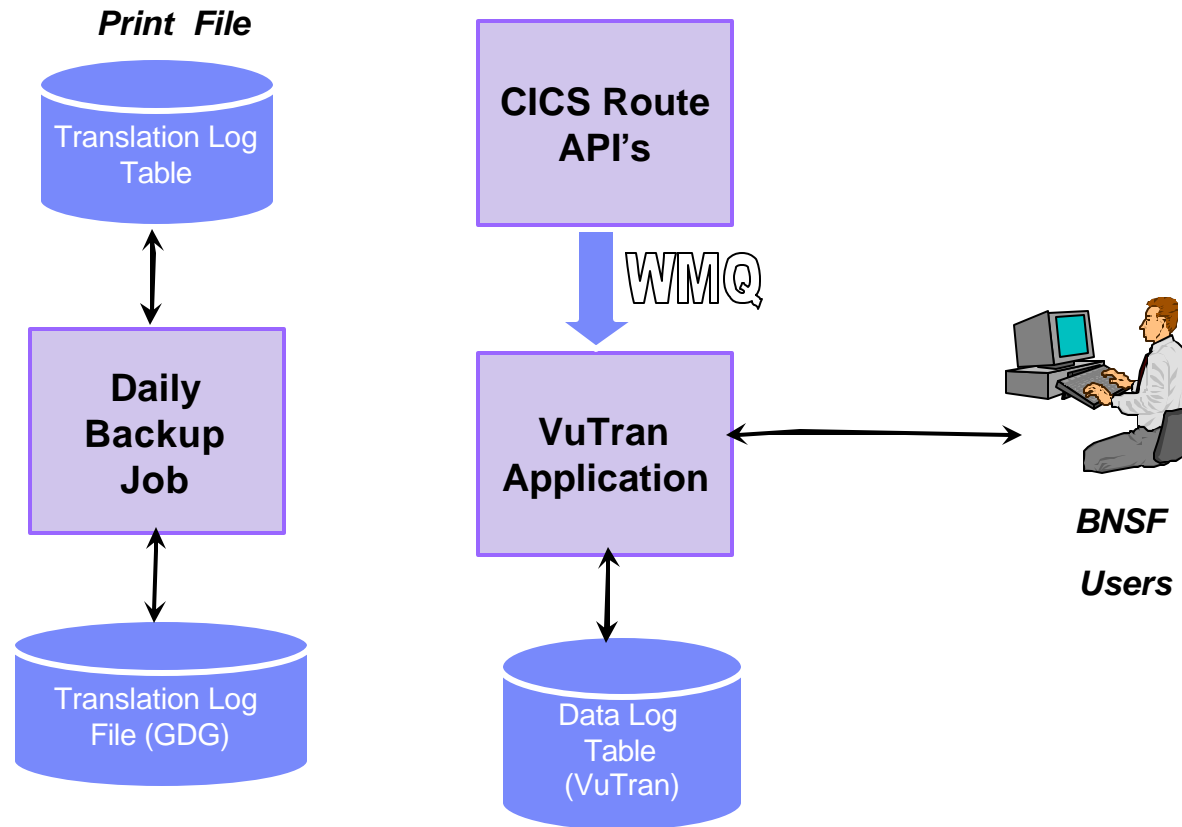
Inbound EDI Realtime Processing



Outbound EDI Realtime Processing



Inbound/Outbound Logging





Data Format Standards

- EDI – ANSI X12, Rail X12
- UN/EDIFACT – United Nations / EDI for Administration Commerce and Trade
- CLM – Car Location Message
- TRAINII – TeleRail Automated Information Network
- XML – Extensible Markup Language
- Custom Flat Files



EDI X12 Message

- ISA*04*SW417 *00* *02*BNSF *02*RRWE *050830*0000*U*00501*149618179*0*P*?
- GS*WB*BNSF*RRWE*20050830*0000*102757546*X*005010
- ST*417*149619567
- BX*00*X*PP*6064670*BNSF*L*B*N
- BNX*A**S
- N9*BM*6064670*BILL OF LADING NUMBER*20050830*00000000*CT
- N9*CV*45050*COIL NUMBER USED AS CONVERTING PARTY FOR SAFE*20050830*00000000*CT
- N9*P8*6064670*PICKUP REFERENCE NUMBER*20050830*00000000*CT
- DTM*ICF*20050830





UN/EDIFACT Message

UNB
+UNOA:2
+CANCCCRA:02
+BNSF:02
+050829:0453
+82241'UNG
+CUSRES
+CCR
+BNSF
+050829:0453
+25595
+UN
+D:96A'UNH





Car Location Message

#BNSF 3550SWSAM010508300001KNSXACHU/
CLMDFR BNSF ACHUMKO 05083000
GATX 015435 LINCOLN NEA08 29 2346 E A MGL129 SIOCITY IA
PBFX 646151 LINCOLN NEA08 29 2346 E A MGL129 SIOCITY IA
EOM00000002
\$0001EOM.





Tele-Rail Automated Information Network Message

#BNSF 3685TRAIN080508300005RRDC /
*0001BNSF5883500508292358102
+NDYX516426E: O:000
=0001SUM0001
\$0001EOM.





Extensible Markup Language Message

```
<?xml version="1.0" standalone="yes"?>
  <Restaurants>
    <RestaurantType type = "CHINESE">
      <Name>panda</Name>
      <FoodRating>5</FoodRating>
      <AverageMealCost>$5
      <Review>Great Food, got to try</Review>
    </RestaurantType>
    <RestaurantType type = "ITALIAN">
      <Name>Oliver</Name>
      <FoodRating>4</FoodRating>
      <AverageMealCost>$6
```





Enterprise Integration Bus Summary

- Tightly integrated “EIB”
- Error and History tracking capabilities
- Translator Print File backup
- WebSphere MQ Queues used throughout process
- Realtime and Batch EDI X12 processing
- Multiple data standards to translate
- Multiple communication protocols
- Route / Driver / WDI Application Program Interface programs





Future Vision

