EDI and the Oracle Application

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September 21, 2004
Overview

• What is EDI?
• Communicating with your customers
• Communicating with 3rd party/Outsourced warehouses
• Putting it all together – technology and process
What Is EDI?

• **Electronic data interchange**
  – Computer-to-computer exchange of business data in standard formats
  – Data is organized according to a specified format set by both parties
  – In most cases, provides for much more detailed information as the “conventional” printed document
Advantages of EDI

• One-time data entry
• Reduced errors
• On-line data storage
• Faster management reporting
• Automatic data reconciliation
EDI Standards

- Developed under the guidelines of various INDEPENDENT standards institutes:
  - Accredited Standards Committee X12 (ASC X12) – United States
  - EDIFACT – European Union
Customer EDI Business Flow

- Common Transactions that a Customer might request from a Supplier:
  - X12 850  Purchase Order
  - X12 856  Ship Notice/Manifest
  - X12 810  Invoice
Outsourced Warehouse Business Flow

- Large Volumes make these transactions extremely important:

  X12 940 Warehouse Order
  X12 945 Warehouse Advice
“Fully Automated” EDI Flow

- Implementing ALL transactions seamlessly ties the supplier with their CUSTOMERS and WAREHOUSE…

```
  Customers  <----- X12 856  <----- iRobot  
               |                    |                    |
               V                    V                    V
           X12 850  <----- X12 940  ----< X12 945  <----- X12 810
               |                    |                    |
               V                    V                    V
  Warehouse  
```
EDI Components

• **In addition** to supplier’s ERP System:
  – Components to import/extract data from ERP
  – EDI Translation Software:
    • Flat File ↔ X12 document
    • ASP or In-House
  – Communication Methods:
    • VANs: Value Added Networks
    • Direct: Modem-to-Modem
    • Internet: e-mail or FTP (utilizing VPN connections)
iRobot: CHALLENGES

• Magnified For the Supplier:
  – Complex EDI Standards can vary across different customers
  – New Communication and Software Technologies need to be implemented
  – Production Support requirements are multiplied
iRobot: Business Requirements

• Customers REQUIRED:
  – 850 Sales Orders
  – 810 Invoices
  – 856 Shipment Notices

• Volumes Required Integration to 3rd Party Warehouse:
  – 940 Ship Orders (Larger Volumes)
  – 945 Warehouse Advices (UCC Codes)

• “Cartonization” of Shipping Transactions:
  – New Shipping Setup Required: Items/Carton
iRobot: Import/Extract from Oracle

• Process to import/extract data from ERP:
  – Manual Entry:
    • 850 Sales Orders from Printed Report
  – Programmatic Customizations:
    • Automatic extract of 940 Ship Orders
    • Automatic import of 945 Warehouse Advices
  – Oracle eCommerce Gateway:
    • Automatic extract of 856 Ship Notices
    • Automatic extract of 810 Invoices
iRobot: EDI Translation Software

- Outsourced all EDI Translation functions to EDI ASP:
  - Translation Software Installation/Maintenance
  - Coding of translation Maps based on iRobot’s specifications
  - VAN Connectivity
  - VAN Private Mailbox Setup/Maintenance
  - Transmission of TEST and PRODUCTION files to/from iRobot’s EDI Trading Partners
**iRobot: Communication Method**

- Outsourced all EDI communications functions to EDI ASP:
  - VAN Connectivity
  - VAN Private Mailbox Setup/Maintenance
  - Transmission of TEST and PRODUCTION files to/from iRobot’s EDI Trading Partners
  - Management Reporting
iRobot: Customer-facing EDI

Customer-facing EDI involves the interconnection of various systems and agents to facilitate efficient purchasing and order processing. The diagram illustrates the flow of information and the components involved:

- **Purchasing Agent**: Interacts with the Customer’s Private Mailbox and the Purchasing System.
- **Purchasing System**: Handles purchasing requests and communicates with the Customer’s Private Mailbox.
- **Customer’s Private Mailbox**: Stores customer-specific orders and communications.
- **Order/Shipping User**: Manages order details and shipping processes.
- **Oracle ERP (OM/MFG)**: Integrates with the Purchasing System and the Customer’s Private Mailbox for inventory and manufacturing management.
- **iRobot**: Receives orders and processes them through its Private Mailbox and Purchasing System.

The diagram highlights the role of ASP (Application Service Provider) as a central hub facilitating the communication between these entities, ensuring seamless order fulfillment and inventory management.
Project Phase: MAPPING

• Each transaction, version, and trading partner MUST be MAPPED between Oracle AND X12:
  – BOTH Oracle Technical Resources AND Translator Technical Resources need to be very familiar with X12
  – COMMON communication mechanism between Technical Resources
  – Frequent use of sample files DURING this phase ensures success
Project Phase: MAPPING
Project Phase: BUILD

• eCommerce Gateway Setup/Configuration:
  – Trading Partner Configuration
  – “Extensible Architecture” (856, 810 Outbound)
  – Code Conversion Setup (“Each” “EA”)

• Custom Program EXTRACT (940, 945)
  – Flat Files are designed like eCommerce Gateway Files
  – Common Standards for PL/SQL Packages (GET, MAP, FORMAT)
Project Phase: TEST

- **UNIT Test:**
  - Test Oracle Application EXTRACT/IMPORT Process
  - Oracle and EDI Translation TECHNICAL Resources
  - Each Transaction TESTED Individually

- **SYSTEM Test:**
  - Test ALL processes, including new BUSINESS processes
  - Test team expanded to INCLUDE:
    - Trading Partners
    - Oracle Application Users
Shipping: Release Order

- After Sales Order is BOOKED, Release using Standard Functionality:
Shipping: AutoPack Deliveries

- Run Custom Program that automatically PACKS the delivery into CARTONS using WSH API:
Shipping: 940 Shipping Order

- Run Custom Program that automatically creates 940 Shipping Order Extract:
  - File is manually/automatically delivered to EDI ASP for translation and delivery
Shipping: 945 Warehouse Advice

- Run Custom Program that automatically imports 945 Warehouse Advice:
  - File is manually/automatically delivered from EDI ASP
  - Program updates DELIVERIES and SHIP CONFIRMS delivery
Shipping: 856 Ship Notice

- Standard Ship Set Automatically Runs 856 Departure Based Ship Notice Extract:
  - All “EDI-enabled” Customers
  - File is manually/automatically delivered to EDI ASP for translation and delivery
Shipping: 810 Invoice

Schedule 810 Invoice Extract:
- All “EDI-enabled” Customers with OPTIONAL parameters
- File is manually/automatically delivered to EDI ASP for translation and delivery
Lessons Learned

• Outsource NON-CRITICAL, highly complex functions:
  – VAN Services
  – X12 Translations
  – Oracle Application **EDI** Mapping
  – Oracle Application **EDI** Technical Development
Thank You

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