Some of My Background

• Have been using OAG technology since 1998:
  – Integration backbone for large scale M&A driven application suite consolidation
  – Intellectual Asset Management (Engineering to IP processes)
  – Supply Chain Execution Suite

• Long Term member of the OAG:
  – Executive Board Chairman for past 3 years
  – OAG Board Member for past 8 years
  – Involved in implementing 30+ projects leveraging OAG based technology on a worldwide basis

• David, Michael and others have been a partners at every step
For the past 25 years Catalyst solutions have delivered reliable, round-the-clock performance for multi-national corporations with distribution centers in the U.S., Canada, Central and South America, Europe and Australia.

- Companies with the most demanding supply chain challenges
- Over 60,000 users supported
- 1,000 Catalyst sites in 15 countries
<table>
<thead>
<tr>
<th>Parts</th>
<th>Retail</th>
<th>Consumer Package Goods</th>
<th>Process Goods</th>
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<td>American Honda</td>
<td>Aldo</td>
<td>Achieve Global</td>
<td>Abbott Labs</td>
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<td>Bath &amp; Body Works</td>
<td>Ames-True Temper</td>
<td>Aldrich Chemical</td>
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<td>Bear Creek</td>
<td>Canon USA</td>
<td>AM Castle</td>
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<td>Blain Supply Co</td>
<td>Catalina Lighting</td>
<td>Applied Biosystems</td>
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<td>Cooking.com</td>
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<td>Cracker Barrel</td>
<td>Fidelity</td>
<td>Bayer</td>
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<td>Maybelline</td>
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<td>Panasonic</td>
<td>Kunzler</td>
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<td>Hudson Bay</td>
<td>Rayovac</td>
<td>Nature’s Way</td>
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<td>Lowe’s</td>
<td>Reebok</td>
<td>Perdue</td>
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<td>Solo Cup</td>
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<td>ShopKo</td>
<td>Sony Music</td>
<td>SDA Logistica</td>
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<td>Uni-Select</td>
<td>The Container Store</td>
<td>Sunbeam</td>
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<tr>
<td>Verizon Logistics</td>
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</table>
• Example Catalyst Retail Warehouse
  – Multiple Modes of operation within a single footprint
  – Use of manual and automated system
  – Multiple order fulfillment models
  – Multiple Host systems
Catalyst Product Suite - Fully Integrated Supply Chain Execution Suite

Catalyst Connect (Network Order Fulfillment)
- Inventory Optimization
- Visibility & KPI’s
- Operational Data Store
- Sourcing
- Host/ERP
- Supplier Link
- Cross Dock Planning
- Appointment Scheduling
- Resource Tracking
- Labor Mgt.
- Sloting
- Dynamic Route Planning
- Manifesting
- Freight Shopping and Routing Guide
- TMSi

Catalyst Compass (Alerts, Dashboard and Reports)

Architecture and Integration Tier

Problem Resolution
- RFID
- MHE / CMS
- Yard Activity Management (YMS)

Wave Planning

Cross Dock Execution

Yard Activity Management (YMS)

Warehouse Domain

Integration Tier

Network Order Fulfillment
- Dynamic Route Planning
- Manifesting
- Freight Shopping and Routing Guide
- TMSi

Supplier Quality
- Cross Dock Planning
- Appointment Scheduling
- Resource Tracking
- Labor Mgt.
- Sloting

Supplier Link

Cross Dock Planning

Appointment Scheduling

Resource Tracking

Labor Mgt.

Sloting

Dynamic Route Planning

Manifesting

Freight Shopping and Routing Guide

TMSi

Catalyst Compass (Alerts, Dashboard and Reports)

Architecture and Integration Tier

Problem Resolution
- RFID
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Wave Planning

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Yard Activity Management (YMS)

Warehouse Domain

Integration Tier
OAG XML Transaction Processing Layer

Integration Tier

- SyncParties
- SyncItemMaster
- SyncBillofMaterial
- SyncHazMatCodes
- SyncShipment Schedule
- SyncShipment
- SyncAdvancedShipmentNotice
- ShowShipment
- GetProductAvailability
- SyncPickList
- SyncCross Dock
- ProcessInventoryReceipt
- UpdateShipment
- ReceiveInventoryMovement
- UpdateInventoryBalance
- ShowProductAvailability
- ConfirmInventoryIssue
- ConfirmBOD
- UpdatePickList
- SyncShipment
- SyncAdvanceShipmentNotice

Catalyst Connect
Operational Data Store

Sales Order

Pick List (s)

Load

ASN
ASN
ASN

Load

Inbound Schedule (s)

Event History

Resources Tracking

Route and Stops

Driver Manifest

Operational

Master

Employee

Customers

Items

Carriers

SC Nodes

Shifts

Vendors

Haz. Mat. Codes

Combine Codes

Regions

Departments

Owners

Vendors

Country Codes

Dock Doors

Work Schedule

Overrides

Owners

Owners

Freight Classes

Network Rules
Transportation Integration

CTD  Orders  Results

Catalyst Connect and TMSi

WMS  WMS  WMS

TMSi

Supports concurrent integration to multiple TMS Engines based on delivery mode or channel requirements

LTL/TL  CM  Dynamic Route Planning
OAG Is Our Conical Model for All Transactions

• Master Data
  – Customer (SyncParties)
  – Vendor (SyncParties)
  – Carrier (SyncParties)
  – Items (SyncItemmaster)
  – BOM (SyncBillofMaterials)
  – Carrier Codes (SyncFields)
  – Post Pick Process (SyncValueAddedServices)
  – HazMat Codes (SyncHazMatCodes)
  – Initial Inventory Balance (SyncInventory)
  – Initial Locations (SyncLocations)
OAG Is Our Conical Model for All Transactions

• Inbound Processes
  – Inbound Order (SyncShipmentSchedule)
  – Inbound Shipment (SyncShipment)
  – ASN (SyncAdvancedShipNotice)
  – ASN Rejection (ConfirmBOD)
  – Actual Receipt (ProcessInventoryReceipt)
  – Receipt Without Order (ProcessInventoryReceipt)
  – Inbound Shipment Close (UpdateShipment)
  – Inbound Change Request (SyncShipment)
  – Inbound Change Response (ConfirmBOD)
  – ASN Close (UpdateShipment)
  – Putaway (ReceiveInventoryMovement)
  – Audit Results (UpdateInspection)
  – Events (UpdateInspection)
OAG Is Our Conical Model for All Transactions

- Cross-Dock Processes
  - Cross-Dock (SyncCrossDock)
  - Cross-Dock Completion (SyncCrossDock)
  - Staging Location Request (GetInventoryMovement)
  - Staging Location Response (ShowInventoryMovement)
  - Cross-Dock Container Request (ProcessInventoryReceipt)
  - Cross-Dock Container Response (ProcessInventoryReceipt)
  - Cross-Dock Container Pool Request (ProcessInventoryReceipt)
  - Cross-Dock Container Storage Request (ProcessInventoryReceipt)
  - Cross-Dock Pick List Request (ProcessPickList)
OAG Is Our Conical Model for All Transactions

- Intra-warehouse Processes
  - Inventory Adjustment (UploadInventoryBalance)
  - Inventory Set/Release Hold (UploadInventoryBalance)
  - Summary Inventory (SyncInventory)
  - Issue Material (ConfirmInventoryIssue)
OAG Is Our Conical Model for All Transactions

**Transportation Processes**
- CTD / Rate Shop Request (SyncShipment)
- CTD / Rate Shop Response (SyncShipment)
- Carrier Mode Request (SyncShipment)
- Carrier Mode Response (SyncShipment)
- ASR Print Request (GetPickList)
- ARS Print Response (ShowPickList)
- Return Service Request (SyncReturnsService)
- Return Service Response (ShowReturnsService)
- Cancel Returns Service Request (SyncReturnsService)
- Cancel Returns Service Response (SyncReturnsService)
- Container Details (SyncShipUnit)
- Container Loaded (SyncShipUnit)
- Container Manifested (UpdateShipUnit)
- Shipment Close Request (SyncShipment)
- Shipment Close Response (UpdateShipment)
OAG Is Our Conical Model for All Transactions

• Outbound Processes
  – Warehouse Outbound Order (SyncPickList)
  – Warehouse Outbound Order Allocated (UpdatePicklist)
  – Warehouse Outbound Order Picked (UpdatePicklist)
  – Warehouse Outbound Order Ship Staged (UpdatePicklist)
  – Outbound Shipment (SyncShipment)
  – ASN (SyncAdvanceShipNotice)
  – Warehouse Outbound Order Close (UpdatePicklist)
  – Warehouse Outbound Order Change Request (ProcessPickList)
  – Warehouse Outbound Order Change Response (ConfirmBOD)
  – Warehouse Outbound Order Status Request (GetPickList)
  – Warehouse Outbound Order Status Response (ConfirmBOD)
  – Packing List Request (GetShipment)
  – Packing List Response (ShowShipment)
Common Integration Model
Underpins All Aspects of our SCE Suite

Based On Open Standards

- OAG
- XSLT
- J2EE
- JMS

Integration Tier

Message Transportation and Adapters

Message Routing

Business Process Management

Business Rules Engine
Flexible Rules Driven Configuration
Flexible Rules Driven Configuration

[Definitions]

If
- Transport Name is: CCT-CCT to Remote System
- and (Message Identifier starts with: 1-)
  - and (Message Identifier ends with: Carrier Download-SyncParties)
  - or Message Identifier ends with: Vendor Download-SyncParties
  - or Message Identifier ends with: SyncBillOfMaterial
  - or Message Identifier ends with: Initial Inventory DL-SyncInventoryBalance
  - or Message Identifier ends with: SyncLocation
  - or Message Identifier ends with: ARS Label Request DL-GetPickList
  - or Message Identifier ends with: Inbound Shipment DL-SyncShipment
  - or Message Identifier ends with: Picklist Response DL-ShowShipment
  - or Message Identifier ends with: Dummy1
  - or Message Identifier ends with: Dummy2

Then
- Target: 10.10.10.33:8166
- and Ignore Result: true
- and Description: HTTP Transport DTD

[Else]
[Definitions]
If
Message Identifier ends with: 0005-CREMAS03
and Message Type is: XML Message Type

Then
HIGH Priority
HTTP Workflow Type
IGNORE Workflow Type
IVP Message Type

Else
If <priority> HIGH Priority?
If <priority> LOW Priority?
If <priority> MEDIUM Priority?
Is Workflow Class Name Valid <class name>
Is Workflow Type Valid <type>
JMS Workflow Type
LOW Priority
MEDIUM Priority
Maximum Message Retries
Message Automatic Retry
Message Content
Message Content As String
Message Correlation Identifier
Message Identifier
Message Originator
Message Path
Message Priority
Message Processing Mode
Message Retry Count
Message Sequence
Message Type
OAIVS Message Type
OS Workflow Type
POSITIONAL Message Type
Parent Class Name of <Configuration Property>
BOD Decoration and Manipulation

[Definitions]
If
   <select a condition> ×
   the OAGIS Document contains XPath <string>
   the OAGIS Document contains action <string> and XPath <string>
   the OAGIS Document's task
   the Qualified Root Element
   the Unqualified Root Element
   the body of the XML document
   what the XPath expression <string> evaluates to
   there is at least one
   there is no
   the number of

Then
   <select an action> ×
   assign the value <string> to all elements matching the XPath expression <string>
   assign the value <string> to the first element matching the XPath expression <string>
   assign the value <string> to the last element matching the XPath expression <string>
   remove all elements matching the XPath expression of <string>
   use class <string> to modify the contents of the XML document
   use transform <string> to modify the contents of the XML document
   set <attribute> to <value>

[Else]

If
   the body of the XML document is : <enter a value> ×
   contains
   does not contain
   does not end with
   ends with
   is
   is empty
   is in
   is in
   is not
   is not empty
   is not in
   is not in
   starts with
Example Projects
Integration Touch Point Summary

- Customer Download Event
- Vendor Download Event
- Item Download Event
- Inbound Order Download Event
- Actual Receipts Upload Event
- Inbound Shipment Close Upload Event
- Inbound Order Close Upload Event
- Inventory Adjustment Upload Event
- Inventory Set / Release Hold Upload Event
- Outbound Order Download Event
- Outbound Order Close Upload Event

- SyncParties BOD
- SyncParties BOD
- SyncItemMaster BOD
- SyncShipmentSchedule BOD
- SyncShipmentSchedule BOD
- SyncPickList BOD
- UpdateShipment BOD
- UpdateInventoryBalance BOD
- UpdateInventoryBalance BOD
- UpdatePickList BOD

- CREMAS03 IDoc
- CREMAS03 IDoc
- MATMAS04 IDoc
- SHP_IBDLV_SAVE_REPLICA IDoc
- SHP_IBDLV_CONFIRM_DECENTRAL IDoc
- SHP_IBDLV_CONFIRM_DECENTRAL IDoc
- SHP_IBDLV_CONFIRM_DECENTRAL IDoc
- MBGCR02 IDoc
- MBGCR02 IDoc
- SHP_OBDLV_SAVE_REPLICA IDoc
- SHP_OBDLV_CONFIRM_DECENTRAL IDoc
Logical Architecture
Home Depot - Mexico

SonicMQ

Catalyst Integration Tier
Catalyst Command WMS Monterey DC

Catalyst Integration Tier
Catalyst Command WMS Mexico City DC

OAG XML

LMS

YMS

Wave Planning

Slotting

Cross Dock Planning

Legacy Host

Home Depot

Catalyst

OAG XML

OAG XML

OAG XML

OAG XML
• Bear Creek (Harry & David’s)
• Saks 5th Avenue
• ShopKo
• Siman (El Salvador)
• Spectrum Brands (Rayovac)
• Sunbeam
• Homebase (UK)
• Dixons (UK)